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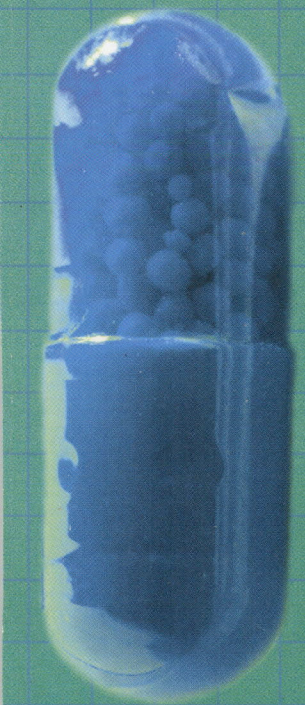
EXCLUSIVE BOWIE INTERVIEW



Health special

The risks of online medicine

Will the Net kill the NHS?

How health sites could help you

How to buy drugs online

5 Easy steps to shameless self promotion

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Internet Magazine, December 1998

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Singer, songwriter, actor and now Internet Service Provider, David Bowie embarks on his most difficult challenge to date and tells *Internet Magazine* his theories about life on the Web

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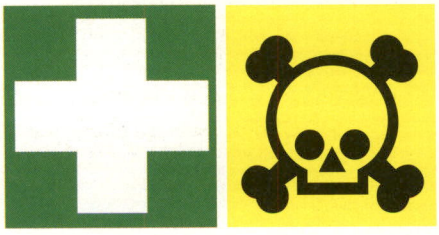

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internet magazine

February 1999, Issue 51

Bird's eye views of your latest property as we home in on estate agents. The Prince of Wales and the *Big Breakfast* become Web savvy and Carlton Online scores a hat-trick to make it Site of the Month. Palmtop Digital Assistants (PDAs) are put through their paces in our Labs test. And we find a site that fails to tackle the millennium bug. But fear not, we reveal a galaxy of superheroes ready to help you.

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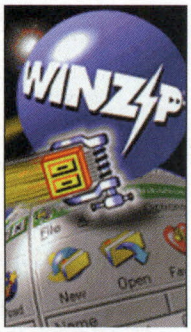

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A bad Web site is worse than none at all

I've spent a lot of time talking to Web designers this month (see the *style counsel* feature which begins on page 32). They didn't agree about much – each had different ideas about what makes a great Web site. Your site clearly has to look good, but it'll also succeed or fail on things like content, the use of technology and how easy it is to navigate or load your pages.

Enthusiasm is always appreciated though, and the designers have provided some great tips for you to improve your Web site and avoid the clangers that make some sites a complete turn-off. The designers unanimously agreed that keeping your Web site fresh and up to date was the most important factor in a successful site.

Each designer told me horror stories about companies which had spent vast amounts of money designing Web sites, only to leave them to rot after the initial excitement had died down. They underlined the importance of putting resources into maintaining the site after its initial construction. The site is too often left to wither, with nobody willing to commit the time and resources that are required to keep it up to date.

This is a fatal mistake – a bad Web site can do more harm than good – it looks like you simply don't care about your product or your customers. A company which didn't have someone to answer the telephone would go out of business, so why should companies regard Web sites as something to do in their spare time? Why is a Web site seen as less important than everything else they do to stay in business?

The Internet may still be in its early days, but it's becoming something you can't afford to ignore. Those companies which don't spend the necessary money to build their site and keep it up to date will live to regret it...

Richard Baguley
Deputy Editor

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Subscriptions and back issues

www.internet-magazine.com/subscribe
(01858) 435 338 (subscriptions)
(01858) 468 888 (back issues)
8.30am to 9.30pm weekdays and
10am to 6pm weekends
Fax: (01858) 435 958 (24 hours)

Print and digital repro **Cradley Print**
Warley, West Midlands B64 6AB

News trade distribution **Lorraine Russell, Frontline** (01733) 555 161

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©1999 Emap Active Publications Ltd
ISSN 1355-6428

Subscription rates

Annual subscription rates are: £35.88 (UK); £40.39 Airmail to Europe; £35.43 Eire; £62.23 Airmail to US and rest of world. Subscriptions Hotline: (01858) 435 338 Fax: (01858) 435 958
Or write to Internet Subscriptions, Tower House. Sovereign Park, Market Harborough, Leics LE16 9EF

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ABC **Audited average monthly circulation: 53,221 (JAN–JUNE 1998)**

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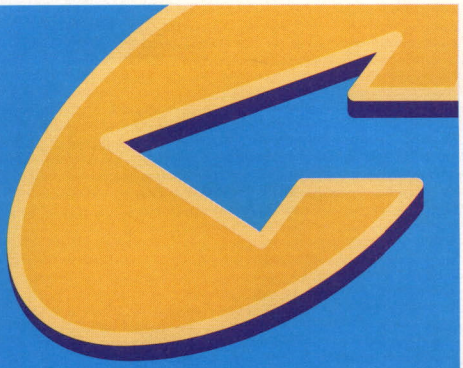

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DTI headhunts 'e-envoy'

Government creates new special representative role to help develop digital economy

The Department of Trade and Industry (DTI) is to appoint an e-envoy to help present its e-commerce message to business and push its e-commerce strategy.

Senior management at top software houses and would-be new media politicos have been honing their CVs thanks to the techno-idealism of former DTI boss Peter Mandelson, who announced the new post in November last year.

Fresh from his fact-finding mission in Silicon Valley, Mandelson decided he needed a hard-hitting industry representative to develop a digital economy. The DTI decided to look for "an outstanding individual" to become the UK's first special representative for the digital economy.

The e-envoy will have two main aims. The first is to spearhead the Government's drive to ensure the UK is the best environment worldwide in which to trade electronically by 2002. The second is to make sure UK businesses and consumers realise the potential that this environment will create. Whoever is appointed to the role won't have much in the way of new resources, according to the job description: "S/he will not create a new organisation but will draw on the resources of the DTI, working with other Government departments and industry bodies." In other words, you get a desk, a telephone and a list of people to ring.

The e-envoy will also be responsible for persuading people that the Government's proposals on encryption and e-commerce are good ideas, in the face of strong opposition from industry bodies and civil liberties organisations. As we have pointed out in our news coverage, the e-commerce bill awaiting Parliament promises to damage civil liberties, compromise privacy and hinder the development of e-commerce. So whether the envoy will be as much use as the drugs czar or just a handy scapegoat for Government policies remains to be seen.

The book is already open when it comes to nominations. Given that the post requires 'a track record of influencing and building relationships at a senior level' and 'the subtlety and sensitivity to understand a complex representational role', it's even money on senior suits from Oracle/EDS/Xerox or other regular visitors to the IT procurement office.

The timing suggests someone is already in line for the job – the post was announced in November and applications had to be received by 6 January.

www.dti.gov.uk/e-envoy

'S/he will keep under review the totality of Government policies.' Makes you feel all warm inside.

DEALS

Heading for the markets

Established UK Internet companies have started to grow on the financial markets, with Virtual Internet going on to the stock market and U-Net being bought out by a US company.

After Net fat cat Cliff Stanford drove off in a cash-packed RedBus last year, a queue of would-be Net moguls have been courting the Square Mile. The first winner of this game of financial *Blind Date* appears to be those Drummond boys who run Virtual Internet. After signing recent agreements to provide services to AOL and JFAX, the company imaginatively renamed itself Virtual Internet.net plc, and bought into a cash shell called Charriol.

This is a quick way of achieving a stock market valuation. Charriol was floated in December, with £1.2 million capital doing not much at all. Charriol then acquires Virtual Internet, backers pour in more money, and *voila*, one Net power player.

Jason Drummond, who will become a director of Charriol, told us he'll now seek to build an IT group by acquisition. He also told us the new structure values Charriol at over £20 million. And, in an industry which can make millionaires out of complete Yahoos, who are we to argue?

All this means that in order to grow and make more money for those city investors who stumped up the initial Charriol cash, the group has to go and buy some companies. And there'll be no shortage of candidates.

Meanwhile, Warrington's U-Net has been acquired by Washington DC-based Via Internet (owned mainly by US ISP Verio).

Terms of the deal haven't been revealed, but there'll be little change in the short term, with U-Net continuing to run as a separate unit. Bill Unsworth will remain as MD and there will be no change in senior management.

www.vi.net
www.v-i-anet.net
www.u-net.co.uk

Who'll be next in the financial *Blind Date*, and will we need to buy a hat?

OVERHEARD THIS MONTH

"These legal victories deliver a strong message – AOL will not tolerate junk email on its network," **says Randall Boe, AOL's associate general counsel on the AOL lawsuit against junk email. Nice to know, if sometimes hard to believe.**

Forget scud missiles, cyberwar hits harder

A new report by a US think-tank claims it would only take 35 people and $10 million to bring the US to its knees by attacking the computers and networks that control much of modern life.

The report (Cybercrime... Cyberterrorism... Cyberwarfare) was produced by the Centre for Strategic and International Studies (CSIS) and states it's now far easier for terrorists or hostile nations to attack a country by harming its computers than by bombing its cities. Terrorist groups could cut off power, trash a telephone system or bring an economy to a halt by destroying the stock market using electronic means.

The report claims: "Security is no longer defined by armed forces standing between the aggressor and the homeland. The weapons of information warfare can outflank and circumvent military establishments... Almost all the Fortune 500 corporations have been penetrated electronically by cybercriminals."

Eight countries have done extensive research into information warfare, while another 100 are researching the potential of this new and cheap form of attack. The director of the CIA claims some hackers are offering "various schemes to undo US interests through computer intrusions".

The report also claims a team of computer-savvy Government agents pretending to be terrorists was able to shut down large segments of the US power grid in a simulated attack in 1997. The same team was also able to effectively shut down the US military's main control and command system in the Pacific. All of these attacks were carried out using commonly available hacking tools downloaded from Web sites.

www.csis.org/pubs/cyberfor.html

Tonight, we take over the world...

GAMES

UWin! ups Quake's stakes

The National Lottery will play a starring role in future games of Quake. That's the vision of Clifton Dutton, vice president and general manager at UWin! And the game may be on your desktop sooner than you think.

Online game specialists UWin!, a subsidiary of GTECH (**www.gtech.com**), the corporation behind the UK National Lottery, has several Java-based games in development and is hoping to license its API (Application Programmers Interface) to gaming designers.

The plan is to integrate these new games with the lottery and build communities of players. The infrastructure would allow for instant messaging and chat so you can talk to fellow gamers about which numbers to choose and which scratch card strategies to adopt. Players will even be able to team up and split their winnings. "Imagine lobby halls of gamers playing against each other or joining forces and playing against the odds," says Dutton. "We're aiming this at the Nintendo generation and we think they'll love it."

Playing the online game would involve downloading the client and setting up an account, similar to creating a telephone account with a bookmaker. UWin! will not disclose how it aims to make the online transactions secure, but concedes it would have to use a financial institution offering 24-hour online banking facilities.

There's already an online lottery, based in Liechtenstein, and run for the benefit of the Red Cross. So will the two sites compete with each other? "There is no impulse buy at PLUS Lotto (**www.pluslotto.com**)," says Dutton. "You go there specifically to buy and you know exactly what you're getting. We'll go after the impulse buyer."

UWin! is set to announce its first partnership in the New Year.

News just in...

The Patent Office **www.patent.gov.uk** has done all budding inventors and businesses a favour by putting an index to the classification of goods and services on its Web site...

US Congress is drafting new laws for tax-free e-shopping, collecting personal information from children and protection for data stored on the Net. Next on the US's target list? No, not Iraq – Spam...

A survey carried out by CE Software **www.cesoftware.com** says 92 percent of us would be alarmed at the prospect of living without email. Meanwhile, firms are confident their employees are responsible online...

Network cache vendor Inktomi **www.inktomi.com** has announced that Microsoft, RealNetworks, and Sun Microsystems have joined its call to standardise the process of cacheing to speed up the delivery of Web pages. No mention of bandwidth, then...

Microsoft **www.microsoft.com** has teamed up with Clarion to bring us the first PC for the car. AutoPC **www.autopc.com**, which costs $1299, combines email, entertainment and navigation in one system. It's voice activated, so surfing while driving won't affect road safety...

ISP LineOne **www.LineOne.net** has dropped its price to £9.99 from £14.95...

The BBC **www.bbc.co.uk** has named Nigel Chapman as its first director of BBC Online. Auntie aims to strengthen its Online site in 1999 to become a vital Internet resource. We thought it already was...

NEC **www.nec.com** now sells postcard-sized flat loudspeakers in Japan. They can even act as picture frames. Perhaps it's the only remaining use for the snail mail cards (apart from entering our fabulous competitions, of course)...

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OVERHEARD THIS MONTH

"This story has a really negative and harmful impact on the public's perception of the medical community and organ donorship." Officials at the Delaware Valley Transplant program say the kidney-snatching conspiracy hoax circulating over the Internet is hogwash. So there you go – don't pass it on.

INTERNET HEALTH

Latest NT virus adopts a cunning disguise

A frightening new virus that can spread throughout Windows NT networks has security consultants worried.

Once a single machine on a network is infected, the Remote Explorer virus can quickly spread to every other Windows machine on the network by pretending to be the network administrator.

First reports of the virus came from the anti-virus firm Network Associates and is thought to have been discovered on the network of a large telecoms company.

The virus attempts to disguise itself as a service (a Windows NT program that runs in the background) until between 3am and 6am on a Sunday, when it tries to spread itself around the network. Fortunately, the virus doesn't seem to have any hostile intent. Network Associate's technicians say the virus does nothing apart from trying to spread itself around the network.

Although the virus seems to be fairly harmless, the idea of a virus that can spread throughout a Windows network from a single infected machine has obviously raised concerns among security consultants.

There is a possibility that the Remote Explorer virus was merely a test run for more damaging viruses to come. For example, if the ability of this virus to spread was teamed up with a more damaging payload (what the virus does), it could be seriously nasty.

Network Associates claims it's one of the most sophisticated viruses it has ever seen: "In our 10-year history, seeing some 30,000 viruses, this is much more sophisticated than anything we've seen before," said Peter Watkins of Network Associates.

www.nai.com/products/antivirus/remote_explorer.asp

Windows NT with added flu...

LEGAL

AOL wins spam victory

AOL is celebrating another victory against spammers with the conclusion of several court cases against companies which had sent millions of email messages to AOL users.

The cases, all against businesses in America, won AOL significant damages against the companies.

AOL claimed the cases were part of its ongoing efforts to dissuade spammers from targeting AOL. "The idea is to... persuade people that it is not a legitimate activity and to discourage people from starting," said AOL lawyer Randall Boe.

The judgement has been welcomed by anti-spam activists. "This is proof that there is a quantifiable cost of spam and that it has the potential to really damage a network," said John Mozena of the Coalition Against Unsolicited Commercial Email (CAUCE).

The coalition hopes that cases such as this will establish a legal precedent

that will allow victims to pursue the spammers for specific damages arising from either receiving or being used to send spam – most spammers piggyback onto other people's machines to send its messages.

AOL has been involved in a string of legal actions and 17 court cases against spammers.

www.aol.com

www.cauce.org

You will pay for your crimes...

Research Focus
Do banner ads work?

How do online advertisers know they are reaching their target market, and how can they tell if a banner ad is working?

Web sites sell ad space based on the number of page impressions received. To date, the basic unit measurement for banner advertising has been the CPM, or cost-per-thousand page views. Advertisers measure the success of a banner ad by the number of people who click-through from a chosen page to their site. But the accuracy and validity of the CPM has been repeatedly called into question.

Consider a standard banner ad placed on the homepage of a major portal. To measure its success in terms of click-through rates ignores the visitors who see the ad daily, but who are never likely to click on it. According to the Internet Advertising Bureau (IAB), a single exposure can dramatically increase brand awareness, product attribute communication and purchase intent, even without any click-through.

"Advertising online significantly increases the reach of a product"

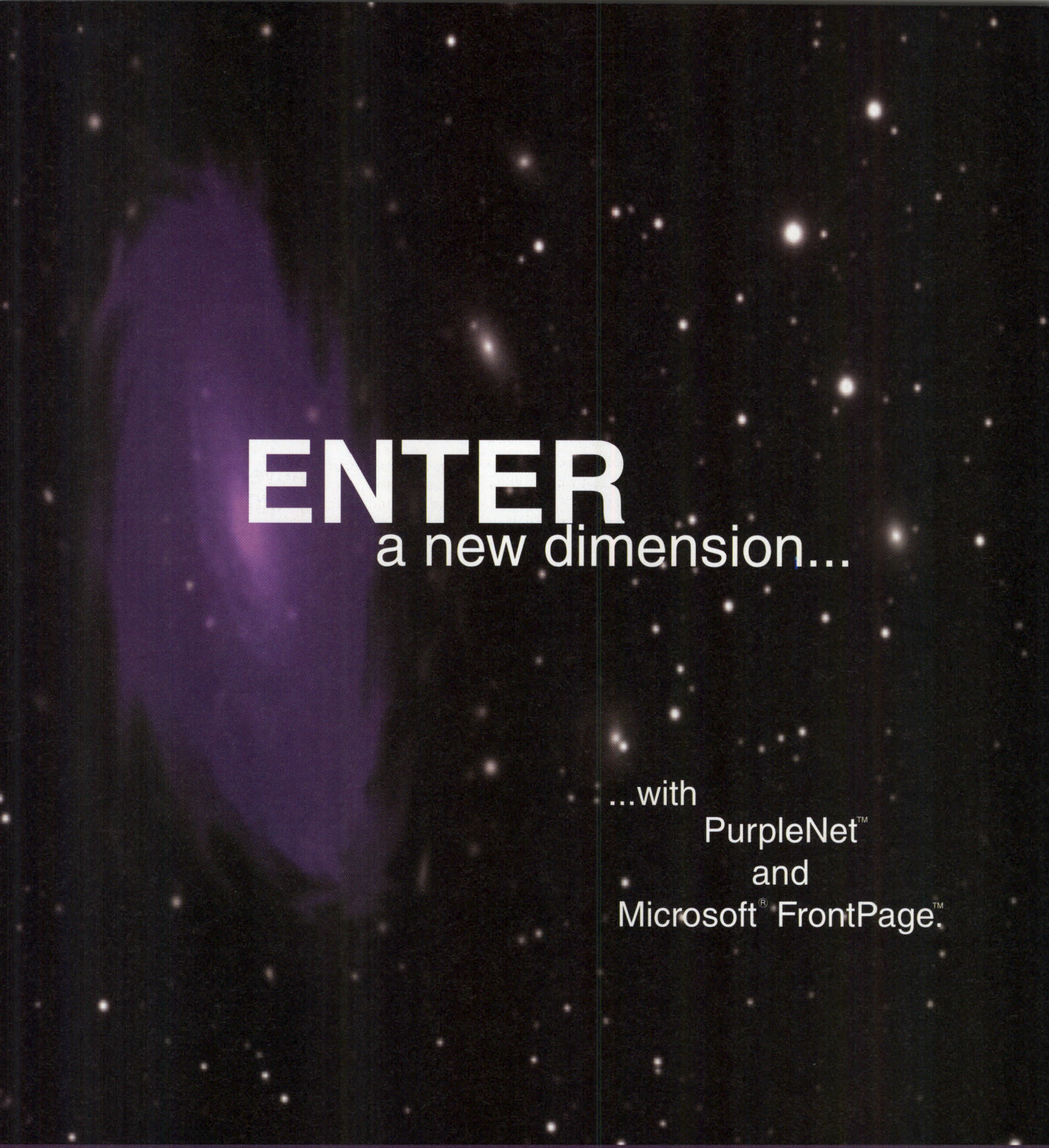
A study by NetRatings found advertising online significantly increases the reach of a product, regardless of whether or not the online consumer clicks on the banner ad. It also found that the more companies invested in banner ads, the greater the increase in market reach. So the bottom line for online advertisers should be whether a product's market share increases as a result of advertising online, regardless of the number of clicks on the banner ad.

Jupiter Communications predicts the Internet will become more personal with a network of niche sites for niche markets. This is good news for advertisers. Research shows that banner ads posted on highly personalised sites have a much higher click-through rate than those posted on general sites.

Interstitials – ads which take up the entire screen while the user moves from one page to another – are expected to take over from the problematic banner ads by the year 2000. Advertisers must therefore give full consideration to the concepts of community and interactivity.

Click-through rates, even if low, nonetheless, give the online advertiser an advantage over his offline counterpart. Consumers motivated to click through to an advertising site are primed to buy. While offline advertisers must be content to wait until the consumer decides to seek out their product, or comes across it in a shop, online advertisers have the opportunity to interact directly with the consumer.

● The Research Brief is produced by Sorcha Ni hEilidhe of the Internet consultancy NUA, with offices in Dublin, London and New York. You can find more details at www.nua.ie.



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Microsoft puts finishing touches to Windows 2000

New operating system will combine Windows 98 and Windows NT

Microsoft is almost ready to release the new version of its operating system. Windows 2000 (formerly known as Windows NT 5.0) will boast a slew of new features aimed at high-end users and servers. Microsoft won't be drawn on when the final version of the new software will make its debut , but it's expected to appear sometime later in the year.

The idea behind Windows 2000 is to combine Windows 98 and Windows NT, giving a single operating system for both home and professional users. Two versions of Windows 2000 are planned – one for standalone machines (Windows 2000 professional) and one for network servers (Windows 2000 Server). As with Windows NT, variants of the server version of Windows 2000 will be released for different markets, including one specifically designed for Internet servers.

A trial version was released last year to a select group of users to make sure the software was ready for widespread testing. A proper beta version, which will be widely available, is expected within the next two months. Windows 2000 includes more than 40 million lines of code and contains, according to Microsoft, nearly all new code – little has been left from previous versions of Windows.

www.microsoft.com/windows/professional

Another year, another version of Windows...

STANDARDS WATCH

Secret standard

The Internet Engineering Task Force is set to endorse a new standard in the summer. The IETF agreed in November that OpenPGP – the public version of the Pretty Good Privacy encryption technology – was acceptable as a proposed standard, so it moves to draft standard this summer, and could be finalised by the end of the year. We should then see more people using PGP with confidence, and keeping their affairs confidential.

PGP was developed by crypto guru Phil Zimmerman in protest at the US Government's decision to classify encryption software as a type of weapon, and is available commercially from Network Associates (**www.nai.com**).

There are also dozens of shareware and free versions of PGP (at **www.pgpi.com**), but with no formal standard for the PGP program interface, large companies have been dubious about endorsing PGP for email encryption. They prefer proprietary solutions from big name vendors, or use S/MIME – a protocol developed by RSA Data Security, which owns key encryption patents.

The IETF has always been at the heart of Internet development and continues to publish its standards, known as RFCs (Requests for Comment). You can find further details of the IETF working group at **www.ietf.org/html.charters /openpgp-charter.html**

Confidentiality – your secret weapon

DEALS

NTL buys Newcastle United – Webcast footy to follow?

Following BSkyB's attempt to buy Manchester United, NTL has bought a 6.3 percent stake in Newcastle United Football Club.

NTL (the parent company of ISP NTL Internet) bought the nine million shares from majority shareholder, Cameron Hall Developments, and has an option to purchase its remaining 50.8 percent shareholding. This acquisition raises the possibility of NTL providing broadcasts of Newcastle United games over the Internet on a pay-per-view basis to Net users in the UK and abroad.

Whether NTL purchases the remainder of the shares will depend on the outcome of the investigation by the Monopolies and Mergers Commission into the BSkyB/Manchester United deal. "This would give us a legal precedent," says Patrick Hamilton, NTL Internet's marketing communications manager. On top of its role as a business ISP, NTL has significant interests in cable television, radio and telecommunications.

So will we see Web broadcasts of the Magpies' games in the future and – more importantly – will we be paying for the privilege? "It's far too early to say," Hamilton says, "but we'll be looking at all of our options." The idea might sound slightly premature, but it's worth noting that NTL is launching its TV Internet set-top box later this year, which will bring the Net to your television.

www.ntli.com

Howay the Net lads

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OVERHEARD THIS MONTH

"We saw a huge demographic shift that was especially heavy at clothing and department stores," **Robert Ivins, senior vice president of traffic measurement firm, Media Metrix, noting the surge of female shoppers in the run-up to Christmas.**

Time Line

February 1

Say goodbye to MSN Canada's Net access service. In the latest shift of emphasis for this chameleon-like provider, the company is today withdrawing its dial-up service and passing customers to AT&T Canada.

February 2

It's Groundhog Day – the day when the US rodent looks

out of its burrow to see if winter is over. And on the global Internet, you can participate online via **www.groundhogs.com**. Or maybe just rent the movie.

February 9

Fed up with Windows? Thinking of switching to Linux? Then get yourself on the plane to Stockholm and head for the one-day, hands-on Linux tutorial at the Swedish European conference. **www.european.se/NordU99/tutorials.htm**

February 12

It's the last day of the Milia Interactive Festival in Cannes, and they're handing out the Milia d'Or awards for the best European multi-media, including Web sites. Last year Scoot (**www.scoot.co.uk**) won a prize. **www.milia.com**

February 20

Without an operating system, your computer's just a lump of metal and plastic. So the Third USENIX Symposium on Operating System Design and Implementation, starting today in New Orleans, should be fascinating – if you're interested in virtual memory, resource management, scheduling and kernels. Otherwise, the jazz is very good. **www.usenix.org/events/osdi99/brochure**

All expenses paid

This month's Net conferences, courses and seminars

The Internet explored

Want to know how to get the best from the Web? Toddle along to this one-day event and cough up £170.38.

2 February

Creating Web pages with HTML – Basic

If you fancy yourself as a Web site designer, you'll need to know this programming language. Start with the basics for £287.88.

3 February

Creating Web pages with HTML – Advanced

For those who are pretty nifty with the old HTML, £ 287.88 will give you a grounding in some more complex skills.

4 February
Old Street, London
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(0171) 282 1940
www.informed-ibs.com/training

UNICOM

Five days of seminars about e-commerce and knowledge management for technically savvy business people.

8-12 February
Commonwealth Institute, London
(01895) 256 484

Marketing on the Internet – an overview

Check out the basics of e-commerce for £346.63.

9 February

Promoting your Web site online

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10 February
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Softworld, human resources and payroll

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10-11 February
Wembley, London
info@softworld.com
(0181) 541 5040
www.softworld.com

Web Design using FrontPage98

A course for anyone who has to contribute to the design of pages for the Web or company Intranet using FrontPage. The price is £763.75.

11-12 February
London
rleader@easynet.co.uk
(0171) 681 4123
www.cyberiacafe.net

Designing a Web site using HTML

Not got a Web site yet? Want one? This one-day course should sort you out and will set you back £175.08.

11 February

Designing a Web site – advanced HTML

Got a Web site? Want a better one? This course is aimed at HTML programmers with a desire to better themselves and spend another £175.08.

12 February
Old Street, London
Info@mnm.co.uk
(0171) 729 9992
www.mnm.com

Web design week

Cyberia brings you five days of Web Design. Learn Basic or advanced JavaScript (£346.63 each), HTML (£611), or find out how to create and manipulate Web graphics in Adobe Photoshop (£346.63). You can book all four courses for £1100.

22-26 February
London
rleader@easynet.co.uk
(0171) 681 4123
www.cyberiacafe.net

European DevWeek 99

Technical presentations from some of the world's leading experts on C++, Java, Visual Basic and COM. Costs vary.

22-26 February
Islington, London
devweek@bearpark.co.uk
(0181) 309 3709
www.devweek.com

ISPCON 99

A trade show for suppliers of products and services to the ISP industry. Make new friends and contacts.

23-25 February
London
http://ispcon.Internet.com/london99/index.html

Internet technology fundamentals

This three-day course will provide a comprehensive introduction for IT staff whose companies are considering connecting to the Internet and have a spare £1227.88.

24-26 February
Cirencester
(01285) 655 888
www.qatraining.com

Bug of the Month: hiccups in HP printers

Just when you thought it couldn't get worse... it gets worse. Network security specialists ISS (at **www.iss.org**) have reported a series of bugs in the network interface of Hewlett-Packard (**www.hp.com**) printers that could cause problems for Internet users.

HP's JetDirect interface lets you plug a printer directly into your local area network so it can be used by every computer, but older versions of the JetDirect software are vulnerable to a host of TCP/IP network attacks. These include a variant on the SYN attack that locks the printer. It's even possible for a hacker to display a 16-character message on the printer's LCD display.

Even the newer versions of JetDirect (which include a Web-based control panel) are vulnerable, since the browser doesn't use a secure connection to talk to the printer, leaving it open to hackers. Anyone out there using an HP printer on their network should check which versions of HP software they are using and upgrade if possible.

As well as this bug, HP has also admitted that its printers aren't Year 2000 compliant – thanks to non-compliance in some JetDirect software. See the customer care page at **www.hp.com/cposupport/eschome.html** for the version list.

Finally, if you're really interested in computer security – and most of the bugs we see on the Internet are dangerous because they create security holes, not because they crash your computer – then there's a good (if quite technical) paper called *The Inevitability of Failure: The Flawed Assumption of Security in Modern Computing Environments*, published by six employees of the US National Security Agency. It's well worth reading, and it's online at **www.jya.com/paperF1.htm**.

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December 1998

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Realtime

RealNetworks has had a chequered history

1983 Rob Glaser, Yale graduate, political activist and writer, joins Microsoft in Seattle. As the company grows, Glaser's role in developing MS Word and the multimedia PC shot him through the ranks. 10 years later, Glaser goes on holiday...

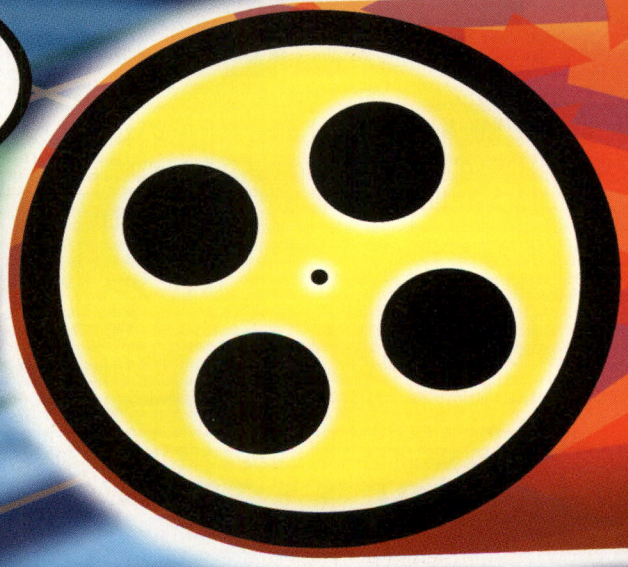
Early 1994 Glaser, now a bullish, political and flamboyant Microsoft executive spurns the overtures of ex-boss Bill Gates to return to Redmond. Instead, he decamps across town in Seattle, takes some ex-Microsoft execs with him (annoying a whole lot more in the process) and cashes in his highly lucrative Microsoft stock options.
And then thinks about what to do...

21 February 1996 Another ex-Microsoft exec Bruce Jacobsen becomes the new President and CEO, and is expected to trace a path through the film and media worlds. Glaser takes the Chairman title yet still retains control of the company. Three weeks later, David and Goliath draw a pact. Microsoft and Progressive Networks agree to support each others formats

December 1997 Again the company goes looking for capital to invest. It drums up $17.9 million in investment after previewing RealAudio 3.0 and the RealMedia architecture just months before.This is a double whammy. Now the company is set to take on the video players(translation: Microsoft) and is capable of funding yet more growth. Offices open internationally and the European market wakes up to the possibilities of streamed media.

February 1997 After buying video outfit Iterated Systems, the company launches RealVideoto complement its 10M existing audio users on the Web. Rumour of an impending buyout from Microsoft is quelled

1999 Can Real Networks turn its users into paying customers, extend its server sales into the Intranet and boost its stock value while warding off predatory mass media organisations on the lookout for a high-tech takeover? Oh, and as with all families, there's likely to be repercussions after a divorce. When the DOJ and Microsoft have finished scrapping, what odds on a full frontal assault by the piqued Redmond giant??



since its beginnings in '83 – so here's your handy guide to where it's been

Illustration by Jac Depczyk

Serious moonlighting

David Bowie, superstar and founder of BowieNet

David Bowie has always had a canny ability to move with the zeitgeist. From Major Tom to The Man Who Fell To Earth, Ziggy Stardust to the Thin White Duke, he's never afraid to reinvent himself. But his latest incarnation as an Internet Service Provider could prove the most demanding yet. Paul Bennett talks to the man with a theory about the Internet

Let's get one thing straight. David Bowie is no Net newbie. He was one of the first artists to cybercast a live show on the Net, he's hosted several online chat forums, and he was the first major recording artist to post a new track on the Net. That's before he started Bowie Art (**www.bowieart.com**), a Web site selling exclusive prints and lithographs over the Net. And in September 1998 he launched himself as an ISP. The reason? To create an environment, not just for his fans, but for all music lovers.

Who introduced you to the Internet?

It really came about by way of my son. He'd been into computer games and was moving into programs. That's the time I caught up with him and that would be around 1993/94. I started doing my own digital prints and working with programs like Photoshop. Mainly scanning and manipulating images using the computer as a creative resource.

I began to feel reasonably computer literate and from that there's a natural gravitation towards getting online – especially when I realised what a tremendous resource the Net was. The trouble is, I've got such a curious nature. I'm resourcing one thing and something else takes my eye and I'm off.

So as a musician and someone who works with images, I assume you're a Mac user.

Oh, I'm a big Mac user. Always have been. They're great. But ultimately it doesn't matter, because one day Java is going to rule.

But at present your site isn't particularly Java enabled.

Umm... no, it's not.

So how do you see the Internet developing over the next few years? Will Java become a dominant operating system?

Oh yes, Java will be there, working across all systems. It's just got to go that way. I see the Internet developing almost as a David and Goliath fight. You'll have large corporate aggregators on one side and small portals on the other. Personally, I think the small quirky portals will win.

Is BowieNet a small, quirky portal?

Yes, that idea was the entire motivation for starting BowieNet in the first place. But it's been a long process. We're shooting from the hip here. We're making it up as we go along. Which is great. The most exciting process of the Internet is that we don't really know what we're doing.

BowieNet is a music-based, content-rich site. It's also an ISP. That's a lot of work for one man. Are any other musicians going to join the project?

Now that we're pretty much set up, I'm asking other musicians to come in and do things like the chat rooms. We've already had David Byrne [former Talking Heads frontman] come in and discuss the sites he likes. There are lots of other artists doing great things on the Net. Prince has tried out some ambitious and adventurous stuff. Whether or not he was able to carry them all out successfully is another thing. The point is, he tried them.

So are the futures of the Net and the music industry intertwined?

Yes, very much so. I don't think anybody should shirk responsibility for involving the Internet in the way that music is disseminated. You can't ignore the Internet.

People say that it's not going to happen, that we'll always be able to pop down to the local store and buy an album. I have a theory about the future of the Internet. Do you want to hear it?

Accepted opinion is that record companies are going to fight MPEG like crazy. And that they're going to pull off any site that they can. That they're going to send out lawsuits left, right and centre. And that the deepest involvement they're ever going to have is by having their own sites. You'll only be able to buy their product through the mail, either by accessing through your credit card or by the old fashioned system of dialing an 0800 number. And that is kind of it. Things like MPEG will be in the realm of pirates and the kids who'll want to put their own stuff up.

But I don't think that's going to happen. What I think will happen is that because the Internet is such a cheap and unavoidable way of disseminating music, the corporations will realise that the best thing they can do is change their delivery system. What they'll do is start to pipe music into the stores, on ISDN lines and cable. At the other end, the geezer behind the counter will be burning CDs for you. That's where it's really going to happen.

So it won't be long before we can compile our own David Bowie CDs from your back catalogue?

Oh yes, absolutely, for sure. You'll be able to get virtually every track I've ever done, completely available, and just choose the ones you want and pay for it track by track.

So will this happen in niche markets, or will it be more widespread?

Oh widespread definitely. The corporations are going to have to go this way. They can't fight this thing for much longer. They'll suddenly turn around and understand that it's a very sane economic move. Listen, as soon as they realise there's a dollar in it, you know they're going to find it.

Isn't this happening already?

Yes, it is. We're putting up an album over a period of months. It's called *Live and Well*. We've got about seven tracks up there at the moment and we're adding a couple a month until there's enough material for a double album. It's the role model that Public Enemy Ltd copied [see box above].

I'm also getting site users to submit their own photographs, ticket stubs, memorabilia, anecdotes about the shows and their experiences of the tour. And that's all going onto Web pages ready to download. What you'll end up with is your own autonomous piece of packaging that goes into a jewel case. Or, you just take the record company URL home with you, take what you want from the site and print out your own packaging. By creating your own packaging you'll, of course, be saving money.

I think this sets a precedent and a model for how you can work with music on the Net. I'm looking at what we're doing and presuming the record companies will follow suit.

So this is your vision for the future?

Yes, I really can't see any alternative. What are the corporates going to do? Fight this forever? Do they really think they're going to stop MPEG? They're crazy. MPEG-3 – it rules!

MPEG

Last year, Public Enemy Ltd set out to promote their album, *Bring the Noise 2000*, by posting song clips on their Web site. The clips were available for free downloading using MPEG. This technology lets you download CD-quality music via the Net. According to Chuck D (above), Public Enemy's lead singer, their record label immediately ordered the group to remove the audio files because the album had not yet been released. Threatened with a potential lawsuit, Chuck D agreed to the company's requests. He then accused the recording industry of "running scared from the technology that evens out the creative field and makes artists harder to pimp".

The recording industry's primary lobbying group, the Recording Industry Association of America (www.riaa.com), has opposed widespread use of MPEG on Web sites unaffiliated with the group, as well as products it has charged with promoting the dissemination of 'pirated' music files.

What is MPEG?

MPEG is shorthand for MPEG 1 layer 3. It is extremely compressed audio data, and because the files it creates are relatively small, they can be transmitted across the Internet. But, more importantly, MPEG files don't lose sound quality, so you can reproduce thousands of songs all to CD standard. To play MPEG songs from the Internet, you'll need to download a player from a software collection. Somewhere like Tucows (www.tucows.com) should have what you need. Then just run the setup program to install the player. There's some confusion over the legality of MPEG files. As Public Enemy found, if you are the copyright holder of a piece of music you can encode it into MPEG format. But it's illegal to encode MPEGs and trade them with others unless you have the permission of the copyright holder of the music.

If you want to find out more about MPEG or want to download MPEG files check out www.MPEG-3.org.

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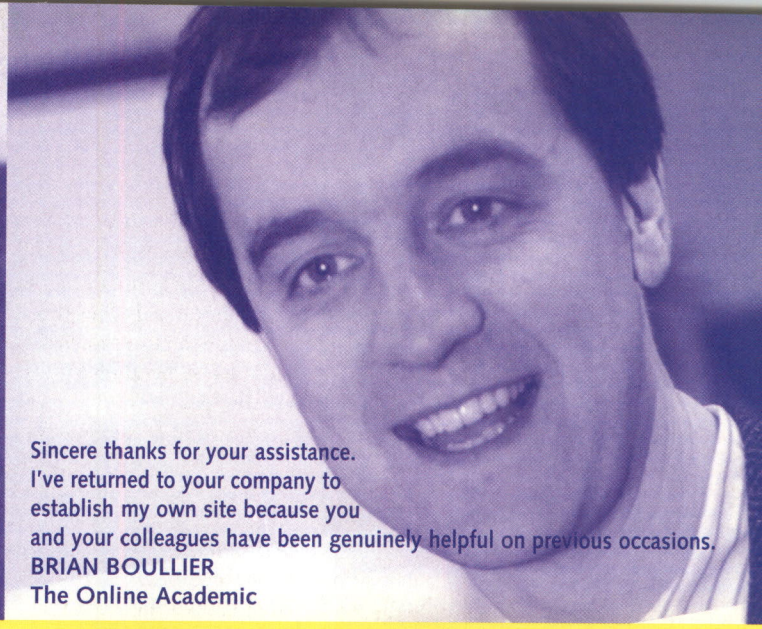

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How long do you think it will be before all of this takes off?

People look at what's going on and everybody says, yes, that can be done, but the future is four or five years away. They've been saying that for years. But the Internet is speeding up beyond belief.

You launched BowieNet as an ISP in the US last autumn. How successful has it been?

Within the music community we are regarded very highly indeed. We're in the thousands in terms of subscribers, which is good enough for me.

So are you making money?

I think we will continue to be successful, but I think that it will be a slow burner purely in terms of numbers of people. But that doesn't bother me, because frankly my entire motivation was to do something new. As long as we're paying for ourselves, I don't particularly care. I just want to keep on being innovative and making the site one of the best, or the best of its kind, out there.

Do people come to you for content, or for access to the Internet?

The division is about 30/70 in terms of complete ISP users versus those who just use the Bowie section. But in terms of hits we're doing around 350,000 to 400,000 a week. The song competition was up to a million a week. Fuck me... for the song competition we've had 25,000 physical entries.

"The Internet does enable you to go off on tangents, but they're wonderful tangents. I love it."

We haven't heard much about BowieNet in the UK since its launch in mid-December.

We're pushing the dial-up access [in the UK], but it was a low-key launch. You won't be seeing many billboards around. So much now is about talking and getting feedback online. I'm not going into the traditional advertising world in the normal way. I won't be appearing on *The Big Breakfast* or anything like that. I won't be shouting, "Get your Internet here!"

Will your idea to brand yourself as an ISP be copied?

Oh, absolutely. I think that will inevitably happen. I think there will be a multitude of branding opportunities.

So why are you on the Internet? Are you a struggling, small ISP, a philanthropic musician or a hard-nosed capitalist?

Oh the money, yes, absolutely – I make a fortune on it. The fact is that I can't even buy a packet of cigarettes on the proceeds from this fucking thing. No, I honestly don't look at it as a money-making thing. I really don't think that small portals will make money. There's going to be an awful lot of labour of love attitude about it. What I want more than anything else is for it to be innovative. Listen, if I wanted to make money from the Internet, I'd go into Dell (**www.dell.com**) country and start providing hardware. That's where the money is.

There is no money in what we do. It's like being in the silent movies. We like thinking we are on the bottom rung of something so impressive and new and innovative that if I'm not a part of this I'll never forgive myself.

One of your first online ventures was Bowie Art. How successful has that been personally and commercially?

Very successful. We've expanded and we've got at least five other artists up on the site. And unlike dealers, we don't take a commission from the artists. I wish I had more time for Bowie Art, but there are only so many hours in a day. Spreading myself between those two sites plus trying to write a bloody album, the days just shoot past. But economically, Bowie Art definitely keeps its head above water.

You've registered DavidBowie.com as your domain name. The domain name bowienet.com is owned by Bill Bowie of Camp Springs, USA. He told *The Washington Post* (www.washingtonpost.com) that he'd sell the domain to you "if the price was right". The *Post* says there has been no word from the Bowie camp – here's your chance to answer. Are you looking to buy it?

No I'm not. He tried to sell us his name and was really pissed off when we told him we didn't need it. He said, "what do you mean, you don't need it?" I said we would have loved to have it had it been free, but we don't actually need it. We have thwarted him.

On the Internet, it doesn't matter how your name is pronounced, but just for the record is it Bowie (as in bow tie) or Bowie (as in take a bow)?

It ranges from Bowie [like bow tie] to Bowie [like take a bow] to Boowie, but I've always preferred the first alternative.

www.davidbowie.com im

The BowieNet Package

There are two options at BowieNet. A full subscription package gives full Internet access and content. It costs $19.95 (£11.94) per month. Or you can sign up as a Premium Subscriber and access the content only. You'll already need to be signed up with an ISP to take this option. This costs $5.95 (£3.56) per month (email excluded), which is billed quarterly at $17.85 (£10.69).

The full package includes:

- Full access to the Internet
- Email address in the format your.name@davidbowie.com
- The Microsoft Internet Explorer browser customised exclusively for BowieNet users
- Local dial-up numbers throughout North America
- 24-hour-a-day technical support provided by Concentric Network (www.cris.com)
- Access to exclusive Bowie content including unreleased audio and video tracks, backstage footage, B-sides and new material
- Music content provided by The Rolling Stone Network (www.rollingstone.com)
- Search service provided by Lycos (www.lycos.com)
- Weekly online newsletter
- 3D chat environment developed specifically for BowieNet
- Webcasts of performances from David and other featured artists

The best Bowie sites

These sites are a must for all David Bowie fans

Simone's Bowie wallpaper site
www.angelfire.com/ca/dbowie/

The Artwork of David Bowie
www.teenagewildlife.com/Othermedia/Artwork/index.html

Stardust: The Unabashed David Bowie Music Guide
www.users.cts.com/crash/p/phil/bowielps.html

David Bowie Personal Page
www.geocities.com/SunsetStrip/Venue/7376/

CelebSite: David Bowie
www.celebsite.com/people/davidbowie/

Wall of Sound
www.wallofsound.com/artists/davidbowie/index.html

Rockmine Archives
www.rockmine.music.co.uk/DavBowie.html

David Bowie newsgroup
alt.fan.david-bowie

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Is it just me?

Every time I see the words 'free software to download', I have to do it. The problem is, halfway through, I get a message to the effect of: 'Tough sh*t – download has reset, have another go'. Thirty minutes online quickly becomes 45 minutes. Is somebody making a lot of money here, or am I just being cynical?

Howard Jones
Jonesfam@btinternet.com

Richard Baguley replies: It's a common complaint, Howard. But there is a way around this – a proper FTP program, such as WS_FTP (reviewed on page 92), will restart the download from the point where it failed, so you won't have to start again from the beginning.

Free speech

Why is there discrimination against those of us that use free ISPs? I've been with Freeserve for a few months and I'm more than happy with the service. People say it won't last or phone support costs a fortune, but I don't need unlimited email or Web space, and I've never needed telephone support.

Shiraz Massood whinges in your December edition about free surfers slowing down his access. Haven't you noticed that the other ISPs' charges have halved since Freeserve and X-stream came out? You wait – by this time next year they'll all be free.

James Powell
james@powell16.freeserve.co.uk

Richard Baguley replies: I'm glad you're happy with Freeserve, but not everybody has found it easy to install the software and get online. We do take free ISPs seriously and appreciate they're changing the Internet industry.

Free mail freedom

Your *Will it wash?* article in the January issue should have mentioned that FreeOnline provides an account for life, whereas Freeserve discontinues your account if it's not accessed every 30 days. *Cat among the pigeons* was enlightening, if only because it displayed the reluctance of the established ISPs to read the writing on the wall. It was a pity the first page was repeated and the last page was missing.

John Riggs
ICQ #5394646

Martyn Moore replies: Interesting points, John, and please accept our apologies for the slight printing problem on *Cat among the pigeons*. The missing text can be read on our Web site.

Comics corner

Comic book Web sites are not getting the attention they deserve. Some of these sites have cool artwork and deserve recognition in your magazine, including mine – Jazma Universe Online, home of the peoples' comic book newsletter! Check out www.twmgrafix.com/jazma.

Paul Dale Roberts
Silhouet@ix.netcom.com

Richard Baguley replies: What a blatant attempt to get free publicity. Our ad department would charge you £500 for that. I'm a great fan of the online comics Argon Zark (www.zark.com) and Bruno (www.baldwinpage.com/bruno.html). Good luck with your site.

Martyn Moore adds: Weirdos corner more like. I'm a Frank Miller fan meself. I want more mail like this, but not just comics – write in and tell us about about anything wild and whacky. It won't be used in Mailbox, but we'll find a home for it.

Where is MSN?

I've been online with MSN for two years, and my family spend a total of between 30 hours and 40 hours a month online. MSN provides a good service – I usually get a connection first time, my connection speeds are between 45kbps and 50kbps. I'm tempted to leave MSN for a cheaper alternative, but I can't see MSN on the list of ISPs to find out how they compare.

Steve Greer

Martyn Moore replies: With so many ISPs to test every month, we can't afford to pay for all the subscriptions – all of the ISPs featured in the tests supply us with the accounts we use. They value the information we provide and have nothing to hide. We've approached MSN several times, but they haven't yet come back with a response.

The curse of content

I was disappointed by your November review of online providers which didn't give the full story, although I can only comment on the service provided by AOL and CompuServe. How about providers' proprietary

Star Letter

No CLI, no BT Click

I can't connect to BTClick+, and was surprised to learn that connection wasn't possible because CLI (Caller Line Identification) is not available in my area. Further research showed it will not be available until 'early 1999'.

It strikes me as rather strange that BT should introduce a service that can't be used by its customers in certain areas. In addition, I haven't noticed any mention of this shortcoming in any of BT's adverts for this service.

I decided to escape from the unfriendly software, high prices and indifferent technical support of CompuServe, and signed up with Global Internet, which has proved entirely satisfactory (so far). However, I've dumped Outlook Express in favour of Pegasus Mail which is a great email program – it's also free.

Finally, may I compliment you on your magazine, it will be my regular reading on Internet matters from now on.

Michael R. Burch
gerynant@globalnet.co.uk

Richard Baguley replies: BT hasn't made any secret of the fact that you need Caller Line Identification to use BT Click+, but it hasn't exactly been shouting it from the rooftops either.

Unfortunately for you, Michael, you must be living in one of the few places left in the country where CLI isn't available. The identification system, incidentally, is also what lets BT track down anyone who abuses the service.

● Michael is this month's lucky winner, and gets a £75 Amazon.co.uk voucher.

software? Can you use third-party software, such as Eudora or Outlook to send or receive mail? The answer, in some cases, is no. How do providers give you access to Usenet? CompuServe's news server has been notoriously slow between posting a message and viewing it in the newsgroup. AOL doesn't let you use third-party offline readers such as Free Agent, and as far as I can make out, it poses great difficulties in using its own software to read/compose articles offline – I gave up trying. These are important issues and I was surprised you didn't address them.

John Brewer
johnbrewer@compuserve.com

Richard Baguley replies: With the amount of space we had for the article, decided not to refer to Usenet support and the use of other software. Instead, we opted to take a look at the differences in content between ISPs and content providers.

We did look at the software they supplied to subscribers, but how could you rate AOL's chat system against CompuServe's moderated forum structure? Still, thanks for the feedback. Any other comments out there?

Virgin on the ridiculous

I was amazed to see Virgin Net move from 87th to seventh place in your test results for November. Virgin's service has been appalling during this period – it's even posted apologies on its newsgroup. Your availability test gave Virgin 100 per cent and I can't see how this has been achieved. I thought your test results could be relied on, but after this past month I'm sceptical.

Peter Godfrey
IslanderUK@compuserve.com

Martyn Moore replies: We stand by our test results, Peter. However, because you're having a bad time, we contacted Virgin Net, whose PR manager, Lisa Francis, said: "We've been carrying out some vital upgrade work. Your magazine tests took place way before this date, so it hasn't been reflected in your testing yet. We're currently implementing our new mail server software, which will greatly improve delivery times and performance."

Competition winners

The Dell competition winner from the October issue was Jan MacQueen of East Kilbride, Glasgow.
Here are the correct answers:
1. **Dell Power Edge servers power the Dell Web site.**
2. **The world's one focused vision made Dell the world's leading direct computer systems company.**
3. **URL means Uniform Resource Locator.**
4. **E-commerce stands for electronic commerce.**

The winner of the iMac competition in the November issue was Fiona Clark from Stirling.
In case you're still stumped, the answers here were:
1. **The i in iMac stands for Internet.**
2. **The statement that read 'The iMac comes with a floppy disk drive built-in' was the incorrect one.**
3. **The three Mac-related songs were: Mac the Knife, Mark Morrison and Old Macdonald**

Congratulations to both of our lucky winners

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BT Internet

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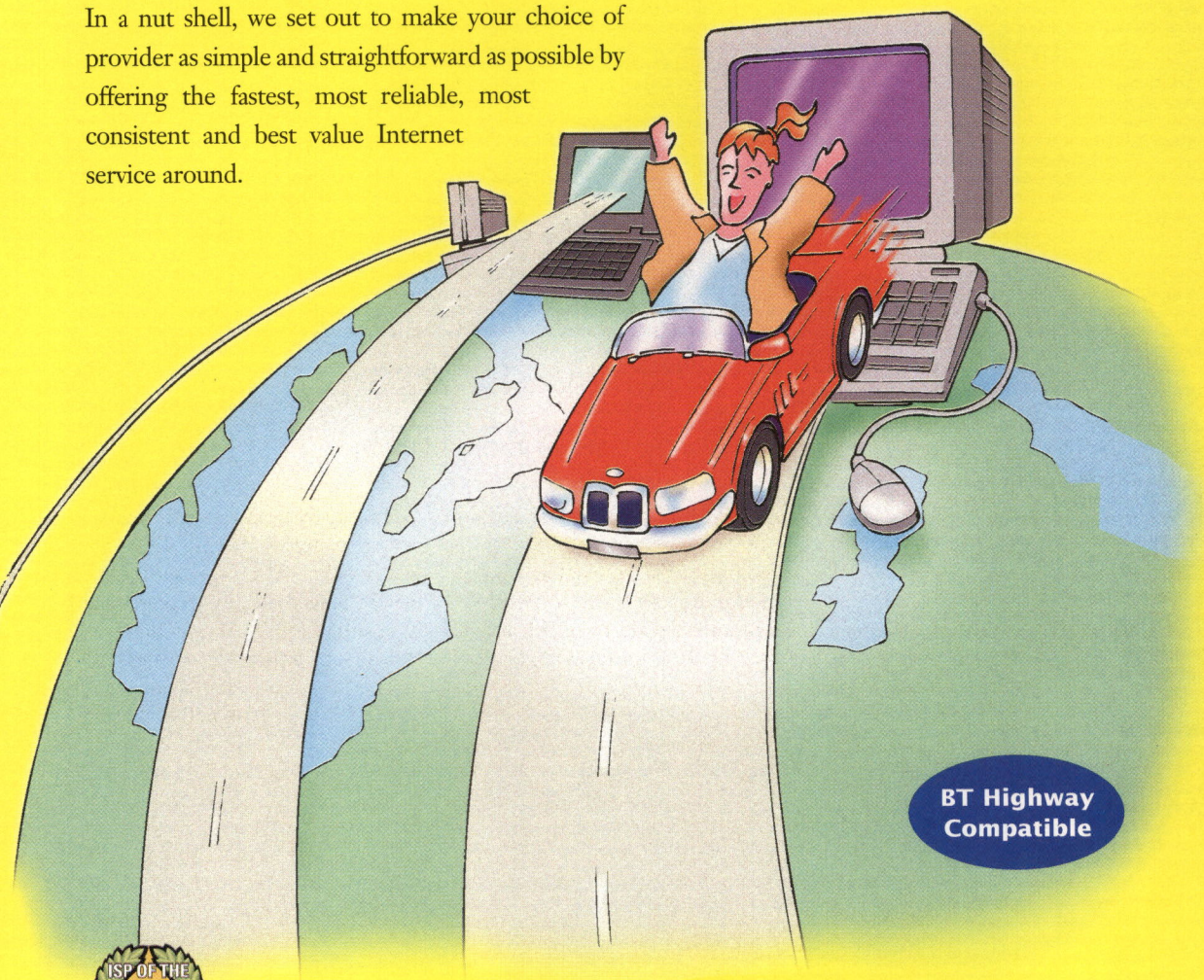

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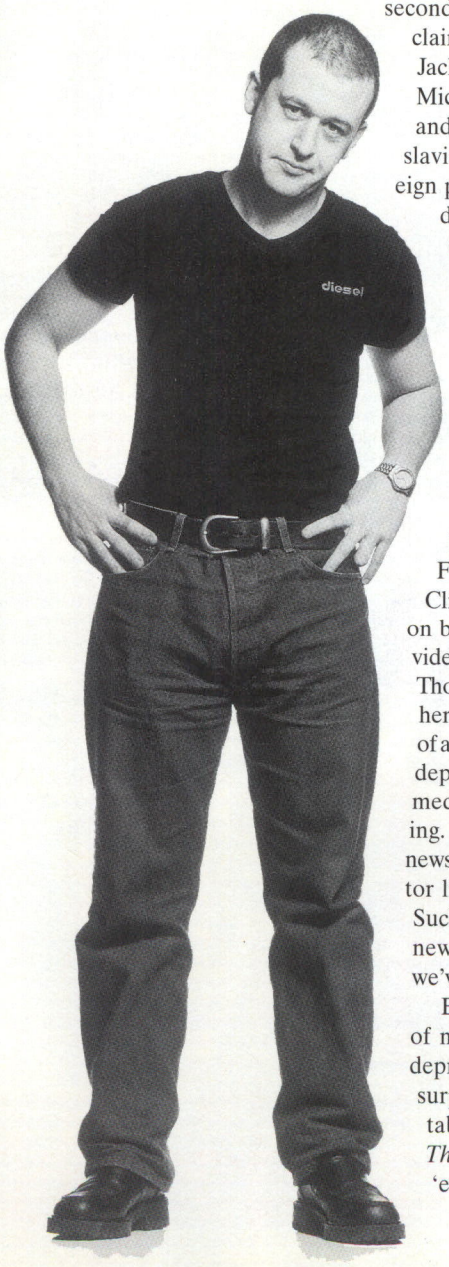
INTMAG03/99

Lead, don't follow

With tired old Net stories still appearing as newspaper 'exclusives', it's about time the old media caught up. Mike Bracken says it's time for something to call 'new'

Nothing is new. Modern life, if not rubbish, is certainly recycled. The decade started with the Prime Minister harking back to a golden age of warm beer and village cricket, and it looks set to finish with a vote to enter a European federation. You could be forgiven for thinking this is a groundhog decade.

At society level, there are only two new features of this decade. You're reading a magazine about the first. The second, the Labour Party, claims to be new, but as Jack Straw turns into a Michael Howard clone and our prime minister slavishly follows US foreign policy, only the spin deserves the 'new' epithet. Which leaves us with the Internet.



We've celebrated our 50th issue, Yahoo! is a household name and Web pioneer Jon Postel is sadly no longer with us. The privatisation of the Net continues apace. Freeserve and BT Click bring new users on board, but they provide little that's original. Those of us who've been here a while sense a lack of anything new, and the dependence on old media brands is worrying. Where's the next news and content innovator like Onion, Feed or Suck coming from? If new content is king, we've had a *coup d'état*.

Evidence of the lack of new content comes, depressingly (but not surprisingly) from the tabloids. Last month, *The Mirror* ran an 'exclusive' exposing some of the more ludicrous answers US schoolchildren had given in exams. This old 'comedy email' chestnut is at least five years old. What next? An exposé of the Darwin awards? An in-depth investigation into those appealing 'Win a holiday' emails which destroy your hard drive? Or perhaps an earth-shattering piece about Easter eggs hidden in code?

But *The Mirror* is far from alone. Some months ago I got a call from the *Sun*. The journalist was writing a piece on three big issues: Viagra, drug dealing and the Internet. I groaned. She knew you could buy Viagra over the Net, and wanted to expose those responsible. Fearing an 'evil peddlers of filth' article – labelling the Internet as a hotbed of perversion and home to anoraks and deviants – I declined to comment, and asked why she didn't take a look around the Net herself. Her answer was telling: "No one here knows anything about it and we don't have access".

"We need something genuinely different. A new journalism."

Now, I haven't been in the *Sun* newsroom, so I stand to be corrected. But this organisation owns a third of service provider LineOne and publishes daily online papers. If it can't give its own journalists access to the world's largest information repository, what hope is there for new ideas and new content?

This situation is, unfortunately, all too familiar in the UK media. While most organisations now have online versions or offshoots, the use of the Web by journalists is a rarity. But that's changing. The *Telegraph*, Associated New Media and *The Guardian* and *Observer* group are busy getting Web access for their employees . So sensible reporting of Net issues will have to wait until Fleet Street's got the hang of it. It'll eventually be a good thing, but for the next year or so, expect a rash of Net-related 'exclusives' which are nothing of the sort. Those old favourites – 'Net porn' and 'the new Bill Gates' – will be among the most obvious contenders.

We need something genuinely different. A new journalism. It's been over two decades since Tom Wolfe's *A New Journalism* highlighted the investigative essayist style which transformed everyday hacks into social commentators. And that new journalism needed a new print medium. Away from the prosaic world of daily papers, a new breed of journalists breathed life into a new generation of magazines.

Twenty five years later, the newspapers are unable to meet the demands of people online. Even legendary authors like Wolfe seem unable to comprehend its possibilities. "It's almost impossible to make a name for yourself on the Internet unless you do something scandalous. It's a ghostland. It's not there," he said recently. Try telling that to Matt Drudge and Michael Kinsley at high brow Web publication Slate, or to half a million Freeserve users.

Online newspaper content might come in a range of imaginative forms, but the use of online myths by the printed versions is worrying. Still, there could be a bright side. As Net articles circulate and become legend, a newspaper might just pick up on a piece from Suck or The Onion and run it as an exclusive. So instead of those hilarious emails about 'why girlfriends are like lager' or conspiracy theory, maybe we'll see headlines like The Onion's '15,000 Brown People Dead Somewhere' or 'Educational puppet pelted with crayons' screaming from the news stand.

Mike Bracken (mikebr@internet.emap.com) is Internet development editor at *The Guardian* and contributing editor to *Internet Magazine*

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The style counsel

If you want to know how to create great Web pages, you ask the Web design experts. Richard Baguley and some of the biggest names in the industry look at what divides the good from the bad and the downright ugly

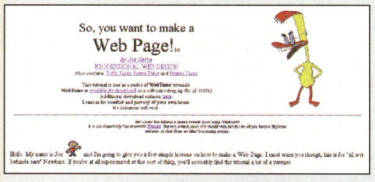
Making your own homepage is easy, anyone can do it. Which is precisely the problem. Because it's so easy, an awful lot of them are abject cack – badly designed and poorly executed, with HTML that breaks browsers and colour schemes that make you want to throw up.

But it doesn't have to be this way. There are a few simple rules that you can follow to make your Web pages look like they were designed by professionals. We talked to some of the top Web designers in the UK and are pleased to present their valuable advice free of charge.

top tips

Learn the basics

Even if you use one of the many WYSIWYG (what you see is what you get) page authoring programs, it wouldn't hurt to buy a basic book on HTML. Use the 'view source' command to see how the program



converted your layout into HTML. Compare it with the book's examples. It's also worth checking out one of the many online HTML tutorials, like Joe Barta's tutorial at **http://junior.apk.net/~jbarta/tutor/makapage**

Choose one Web design program and learn it

There's plenty of Web design software to choose from, but it's best to decide on one and stick with it. This is especially true with the more sophisticated programs like FrontPage or Dreamweaver, which include so many features that it could take you months to learn how to truly get the most out of them.

Keep an eye out for new programs or new versions of Web design systems. Programmers are always adding new features to programs and releasing new tools, so don't be afraid to try them out – they might save you time. See the section on The Best Web Design Tools (on page 38) for more details of which programs our experts recommend or don't like.

Spend time planning

Draw a sketch of your site with all the pages shown in relation to each other. Consider the potential thoughts of a person using the site.

Focus on customer needs

What do people want from your pages? Use technology appropriately – there's no point on using the latest technology if it means people can't use your site.

Think small

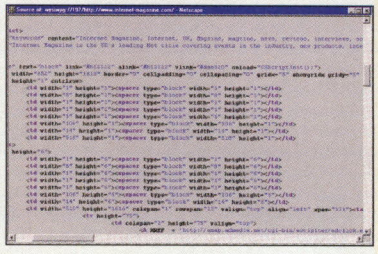
The first site you build shouldn't be an all-singing, all-dancing spectacular. Start off with something small that you can use as a place to learn about building Web pages and then work your way onto that encyclopedic Web site you've been planning all this time.

The three click rule

Spend time understanding a navigational framework and why it works or fails. You should never confuse the user with more than six options or put them more than three buttons away from the information they are looking for.

If you like an idea, nick it

The Internet gives great opportunities to... er... 'learn from others'. If you see something you like, then it is usually possible to



work out how it's done and 'employ a similar technique' on your own site. Select Document Source from the View menu in Navigator or Source from the view menu in IE to get to the page's code. Learn how to cut, copy and paste.

Keep the design simple

New techniques like Cascading Style Sheets (see later tip) let you use different fonts on your Web pages, but don't go over the top. You should use a maximum of three fonts on a page, and there's usually no need to use more than one.

A few good colours

As with fonts, a good design doesn't need to use lots of colours. Choose a few colours as part of your design and stick with them.

Use appropriate technology

Don't use flashy techniques like Flash or streaming audio just to prove you can – use it to help improve your pages. You won't make any friends by creating huge, bloated pages that take ages to download for little reward.

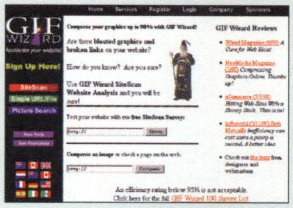
Technology as a driver

But well-used techniques can help a site stand out from the crowd – a site about a band which has a streaming audio version of one of their songs is more likely to impress than one with just a few moodily lit pictures.

Fewer images means faster pages

Every time the browser downloads a new image, it has to go through a handshaking process with the Web site, which takes time. Using fewer images on your site keeps this time down to a minimum.

Small is beautiful



Keep your images as small as possible. Use a system like **www.gifwizard.com** which can automatically compress them for you.

Thumbnails point the way

If your site contains large images, you don't have to put them straight onto the page. Instead, use small versions which link through to the larger versions on a separate page.

Less colour is more

Fewer colours means smaller images, which is a good thing. Most images won't suffer if you reduce the number of colours, and programs such as Debabelizer (at **www.debabelizer.com**) can do an excellent job of reducing the colours in an image while maintaining the quality.

Interlacing is good

Saving GIF image files as Interlaced GIFs doesn't make them any smaller, but it does mean that they will appear quicker – a low resolution version will be shown on screen and will be gradually replaced by the hi res version.

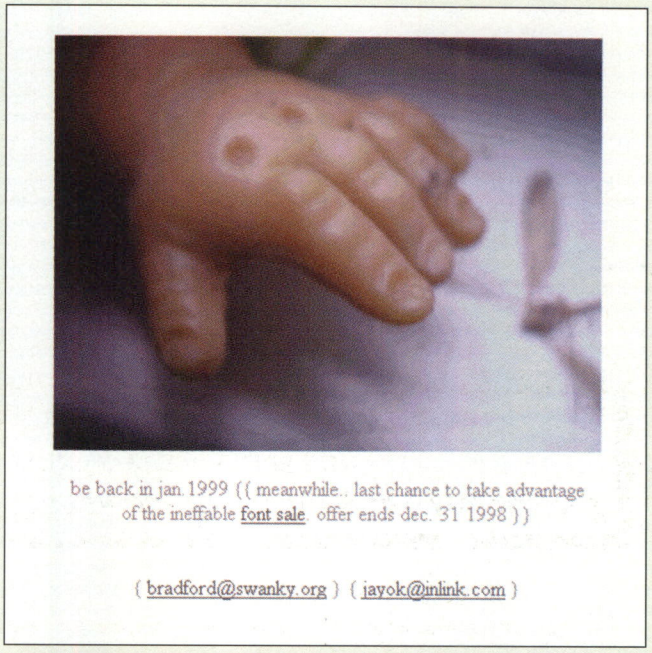
Use blank GIFs to format

If you need to precisely place an image on the page but don't want to use Cascading Style Sheets (of which more later), you can use a pure white (or whatever your background colour is) GIF to do it – just put an appropriately-sized GIF file next to the image to place it.

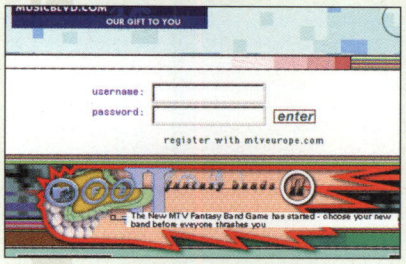
favourite sites

Mike Slocombe

Mike Slocombe has designed a number of high profile Web sites, such as Snickers (www.snickers.co.uk), NCR (www.ncr.com) and the Teletubbies advent calendar (www.bbc.co.uk/teletubbies). He is also the brains behind the online magazine Urban 75 and the co-author of the now legendary Slap a Spice Girl game.



"Swank Army at **www.swankarmy.net/sound** is my current favourite. Some of the HTML is rather poor, but the enthusiasm shines through. It's what the Internet is all about – that punk ethic of going out and doing it yourself."



The worst site he's seen recently is the MTV Europe site (at **www.mtveurope.com**). "It's graphics-heavy and uses a Java applet on the front page, which is a definite no-no. You also have to register to use the site and the Java applet doesn't always work."

As for the sites that he's worked on, Mike's favourite is NCR. "They gave me complete creative freedom – instead of just putting a glossy brochure onto the Web, they wanted it to really work with the medium."

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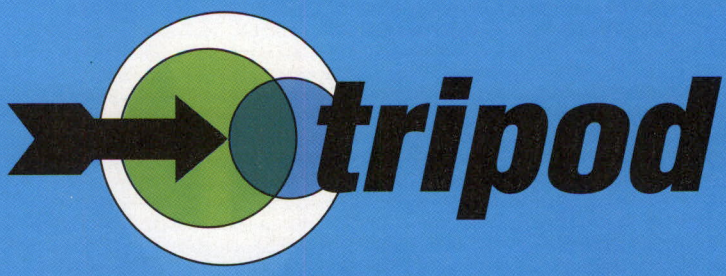

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Always use size attributes with images

You should always specify the width and height of an image in the IMG tag. This will make the pages smoother, because the browser can build the page on screen even before it has downloaded the image.

Use ALT tags

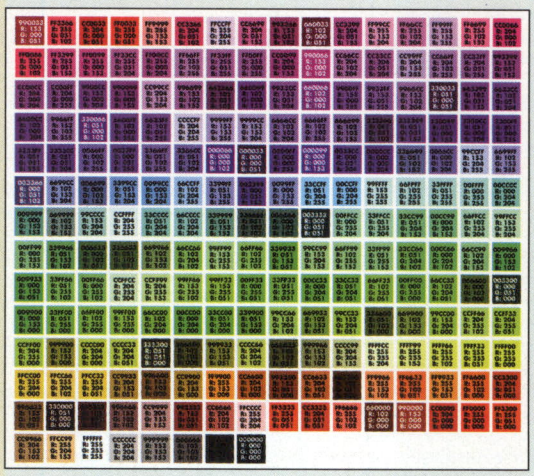
Some people like to browse pages without downloading images, so use the ALT component of the IMG tag to give them some explanation of what they are missing.

Scale up small files

If your design uses solid colour bars, you can use one of the quirks of HTML to make the file size smaller. Create a colour panel that's only a few pixels wide but set the height and width attributes to something larger, and the browser will scale the image up to the specified size.

Use the proper colours

Many computers can only display 256 colours, so your images could end up looking poor if the computer has to make them up from others. Fortunately, there are 216 colours that nearly all browsers can work with, so use them. See **www.lynda.com/hex.html** for a list.



Don't underestimate preformatted text

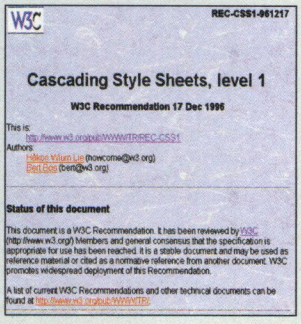
Using the PRE tag with preformatted text (text with spaces and tabs in it) can be surprisingly effective, and also downloads and appears on the page much quicker then using tables, or frames.

Remove the returns

Most Web browsers will ignore returns in HTML, so you don't need to put returns after every little bit of code. In fact, some browsers will get seriously confused if you do put returns in, so keep them to a minimum.

Use Cascading Style Sheets

Cascading Style Sheets are a great way to use fonts and text effects on your Web pages, and are supported by both major browsers in their 4.0 versions. As well as fonts, CSSs let you create styles which can then be



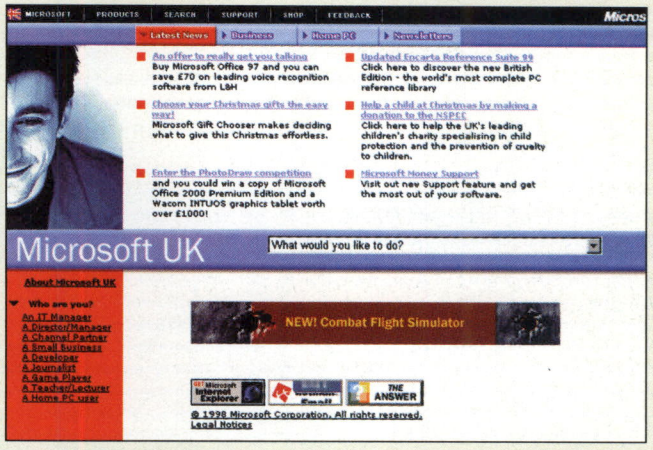
favourite sites

Ajaz Ahmed

Ajaz is from AKQA (at www.akqa.com), the agency behind high profile sites for large companies such as Orange, Land Rover and Durex.

"My favourite is **Amazon.com**, because it understands the psychology of selling. The technology works, and it's the whole functionality of the site that makes it so good."

He is less direct when it comes to naming the worst site he's seen recently: "There are a lot of sites which are turn-offs. There are more bad than good sites out there."



The favourite site that he has been involved with is Microsoft UK (at **www.microsoft.com/uk**). "It's consistent and easy to use. Microsoft is a multi-faceted brand, so it has to speak to lots of different people through one site. It's head and shoulders above all of its competitors."

favourite sites

Aidan Cook

Aidan Cook is from Sense Internet (www.sensel.co.uk), the design company behind sites like www.asda.co.uk and harryramsdens.co.uk.

"My favourite Web site is the search engine Altavista (at www.altavista.com) – it seems really obvious, but I can't remember ever saying 'Well why can't I do that?' when using it, and I use it every day. Either that or Amazon, for the same reasons." Aidan is also unwilling to single out one site as the worst he's seen. "Worst is going to be difficult, because you only ever look at them once. Pet hates? Pages which don't work in some browsers. Pages which don't have plug-

in alternatives. Frames which don't resize. Oh, and don't even get me started on vertical text..." For sites that he's worked on, www.rizla.com stands out as his favourite – "a team effort by Sense, and we love getting the feedback from rollers around the world – everybody seems to love the brand."

top tips

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applied across all of your pages at once. Pay a visit to www.w3.org/TR/REC-CSS1 for the lowdown.

Generating style sheets automatically

If you want to try CSSs but don't fancy writing them yourself, try the Builder.com style-o-matic at www.builder.com/Authoring/CSS/ss12.html or the CSS reference table at www.builder.com/Authoring/CSS/table.html

Selling your wares

It's getting easier to sell your goods and service over the Net. Systems like Worldpay (at www.worldpay.com) can deal with all the tedious business of processing credit cards and the like, leaving you to spend the profits.

Test, test, test...

Linkbot

When you've built your site, test it to destruction. Check every link and every page, or use one of the many programs that will do it for you, such as LinkBot at www.linkbot.com. It'll also check your links to other sites.

Do another test...

Put your new pages onto a secure bit of your site which doesn't come up default (by calling the first page thisisthetest-page.html, for instance) and email a few friends and ask them to try and break it before you unleash it on the waiting world.

Check the pages in other browsers

Even if you think most people looking at your site are going to be using Internet Explorer, check it with other browsers like Navigator and Opera, and write the pages so they look fine in all of them. You won't be doing yourself any favours by excluding users who don't share your preference in Web browsers.

Don't assume the plug-ins exist

Much like browsers, not everybody has or wants to spend time downloading plug-ins or Java applets. So, if you use systems like Flash, make sure that people without the Flash plug-in can use the pages and see what you're talking about.

...and test it again

Testing is especially important if you use Java on your site – Despite what Sun claims, not all Java applets will run on all machines. Test the applets you use on a variety of computers to make sure they're stable and won't annoy people by crashing or failing to work.

Stick with the standards

W3C WORLD WIDE WEB consortium

Standard ways of designing Web pages are there for a reason – to make sure everyone can see your pages. Stick to standards like HTML version 3.2. If you aren't sure whether something is standard, check it on the Web page of the World Wide Web Consortium – it sets the standards (www.w3c.org).

Validate your pages...

The W3C offers an HTML validation service to spot errors or problems in your Web pages. See http://validator.w3.org.

...and validate them again

It's probably worth running your pages through a couple of HTML validators to spot any errors. See www.flfsoft

.com/htm/html_validators.html for a list of other ones to try.

Weblint HTML Page Validator

Title: Internet Magazine - The UK's best Net title
URL: http://www.internet-magazine.com

- **The HTML Page has 313 lines and is 25,840 bytes long.**
- **The File was last written on 11 Dec 1998 15:45:19 GMT.**
- **230 Errors or Style Violations were detected.**
- **See the Detailed Report**
- **See the HTML 4.0 Specification issued 18th December 1997.**

But don't take it personally

Most of the validators listed will find errors on most Web pages, so don't take it too much to heart if they find lots of errors. Look through the list for the more important ones.

Do it right

The W3C can also provide you with information on how to cater for the visually impaired (**www.w3.org/WAI/ www.w3.org/WAI**) and has up to date information on issues such as privacy and data protection (**www.w3c.org/p3p**).

Use META Tags

Effective use of META tags (keywords built into your page code) can make the difference between loads of traffic and one person and their dog looking at your site because nobody can find it on any search engines. Use them properly – see **www.zdnet.com/wsources/content/0298/hd_nt_wm.html** for a good guide on how to use them.

Keep your site up to date

Few things smell worse than a Web site that's out of date. What's more, it could be positively harmful or illegal if your Web site contains information that is out of date, such as old prices. Apart from that, you'll look stupid.

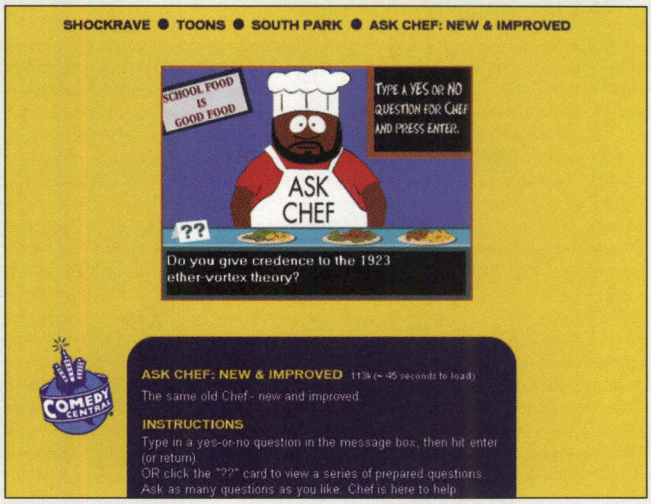
Designer, promote thyself

If you're using your site as a way to show off your Web design skills, try to demonstrate the range of your skills by using a variety of techniques and a number of technologies in your pages. If you are looking for a job as a Web designer, you'll need to know more than one aspect of design – you'll be expected to be familiar with a range of Web technologies, as well as programs like Quark Xpress and Photoshop.

favourite sites

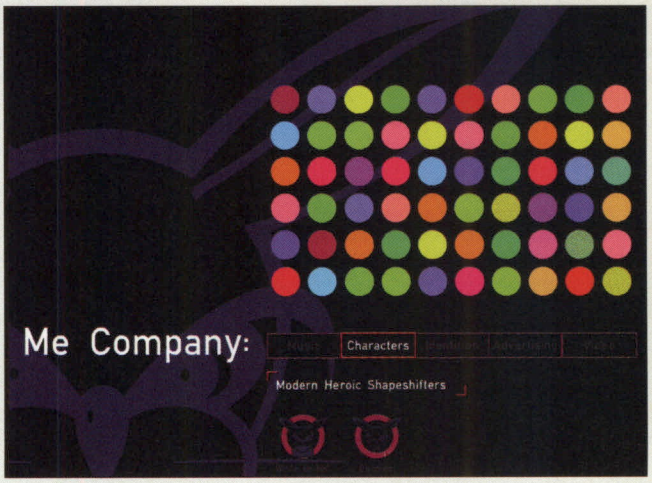
Tom Calthorp

Tom Calthorp is one of the top Macromedia Flash designers in the country, and has worked on a number of prominent Web sites.



Tom didn't want to give a single favourite Web site, but did recommend that users take a look at "**www.shockrave.com** as a good 'guide' to excellence". He was rather more open about the worst site he's seen recently – **www.vodaphone.com**. "Vodafone's site has many a design flaw and even manages to use Flash in a rather pathetic way, but the main issue I have with it is that it's content is not well thought out, the result being that you find yourself typing something like

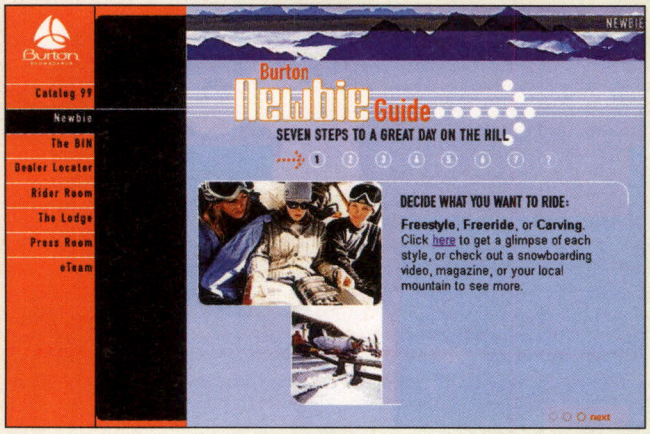
www.orange.co.uk." Of the numerous sites that he's worked on, he found it hard to choose a favourite – "we work with design partners, hence we never really own a design – **www.mecompany.com** is a good example"



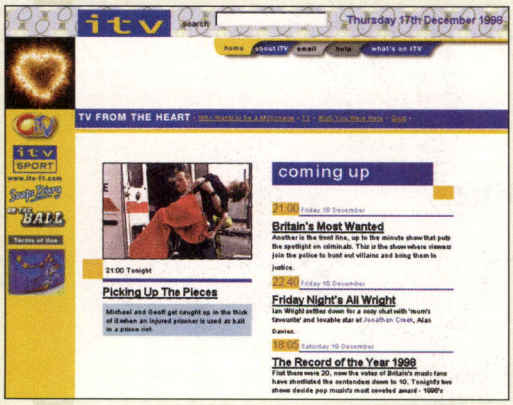
favourite sites

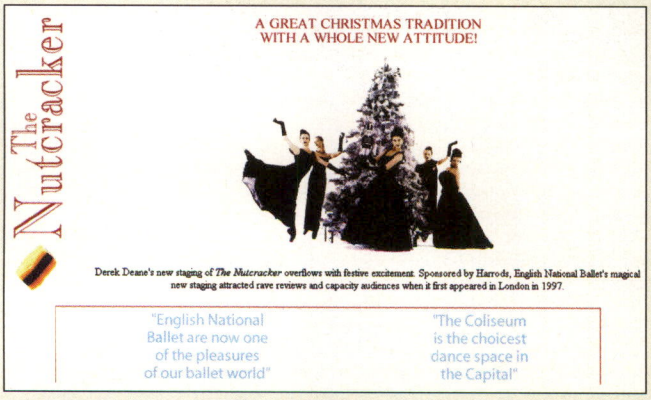
David Scholefield

He's one of the leading lights behind the prominent Web design company port8o (www.port8o.co.uk), and David Scholefield has some strong opinions about good and bad sites.



"I think the best-designed site I've seen probably originates from outside the UK, which is sad. There's a place in my heart for the Snowboarding Newbies Guide at www.burton.com, but mainly because I'm a Burton snowboard fanatic and it's a site that manages to look reasonably good without resorting to deconstruction design or plug-ins. As for the worst, www.itv.co.uk comes close to being the site that does so little with so much potential, and its quality control is appalling. Today, for example, there is a picture on the front page about Grafters, with an ALT tag that says Philadelphia. Typical. From the sites I've designed, English National Ballet's site is riding high in my personal charts at the moment (www.ballet.org.uk). It's well-designed yet highly functional, and promotes the wonderful imagery of English ballet through an online magazine *In The Wings*. It's also fun to navigate and has a number of innovative features."



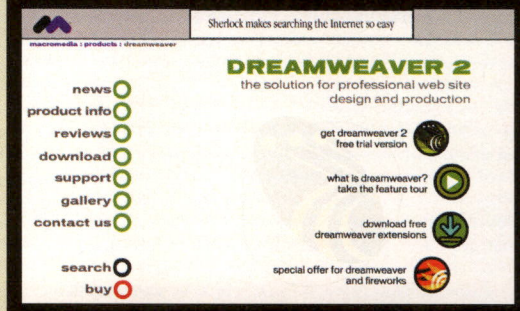


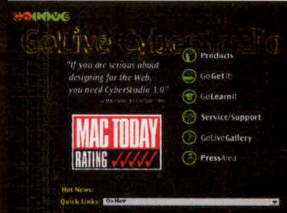
The Best Web Tools

Choosing the right Web design program is a crucial, yet it's often done merely on the basis of what happens to be lying around at the time. People who make a living from designing Web pages tend to be much more discerning – if you're being paid to do it, time is money, and you want a program that lets you do your job as quickly and easily as possible.

Unsurprisingly, professional Web designers disagree over which one to use. Mike Slocombe recommends Windows Notepad. "It's the best way to learn the basics." Aidan Cook of Sense Internet agrees: "Beginners should always start by writing the HTML as a simple text file, with no recourse to editors. It's the only way you'll learn..."

Meanwhile, Ajaz Ahmed is a fan of Microsoft's FrontPage, both for new and experienced users. "Also for general updates, the Microsoft Office products have a lot built in HTML stuff which can be very useful."





Tom Calthorp reckons you can't go far wrong with Macromedia's Dreamweaver. "Dreamweaver is great, but if you've got a Mac, CyberStudio still has by far the easiest interface."

David Scholefield of Port8o doesn't recommend any specific package. "Although no one believes it any more, port8o sites are always designed as concepts on paper and in general graphics packages, and are then implemented in Notepad. We use packages for roughing out ideas and quick mock-ups." Instead, he recommends you use the tools appropriate for the job at hand. "The real tools of our work are for quality assurance and project management. We have always found that getting your hands dirty is the most flexible and consistent method: we can then drive the site production rather than the tools driving us. We'd recommend high-end packages such as Dreamweaver, HomeSite and Fireworks – professional tools rather than software like Frontpage. Visual Interdev for ASP back-end database driven pages is useful."

Strangely, most of the designers didn't want to be drawn on which Web design programs they'd recommend people didn't use Nevertheless, several did confess to an ardent dislike of Microsoft Frontpage. Mike Slocombe claims that Microsoft's flagship HTML program "doesn't follow the standards, and bungs in about half a ton of HTML that isn't needed."

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thE StaR RepOrT

Andy Warhol promised that "in the future, everybody will be world famous for 15 minutes". Now we have the Internet, Davey Winder explains, you can be famous for a bit longer if you work at it

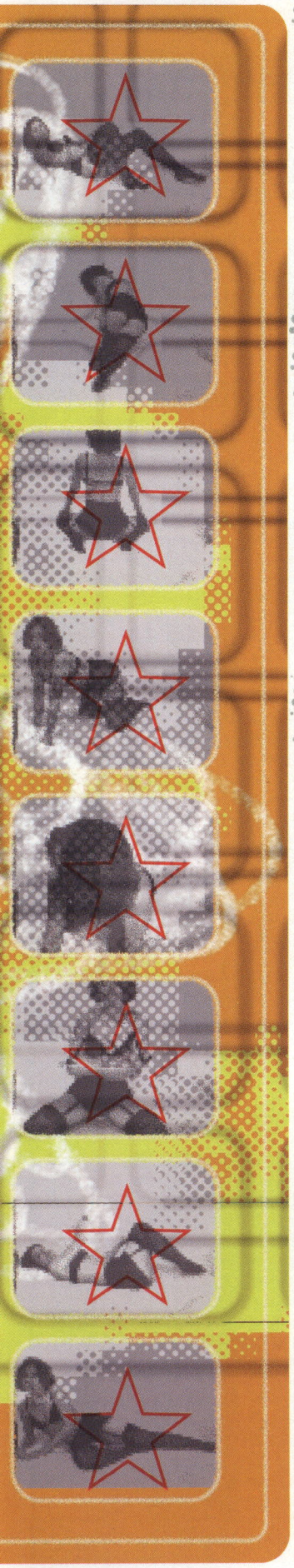

Illustration by Agent F

Andy Warhol was right. Take TV learner driver Maureen, for example, who has achieved a shocking degree of stardom just for being useless. Lucky breaks are just as important to the online fame seeker as they are to the Maureens of this world, but they're much easier to come by if you know the rules of engagement.

Which is where I come in. I've already been there, done that and have the T-shirts available at reasonable prices. My 'lucky' break came in the late '80s, when serious illness left me with plenty of time to kill, and online accounts to play with.

I spent hours each day and night online, and reinvented myself as a character called Wavey Davey who had an opinion on everything. I soon attracted the attention of the media, which was starting to get interested in this Internet thing. An interview in *The Independent* was followed by a three-page special in a Sunday supplement and my picture on the front cover.

TV appearances on the likes of *Good Morning with Anne and Nick* (fame does have its down side) arrived, as did offers to write columns in computer magazines about the Net and online life. I was described by one newspaper as 'the UK's first virtual celebrity' – a tag I was happy to exploit. Fifteen published books, scriptwriting, TV presenting and a video later, I won the coveted Technology Jour-

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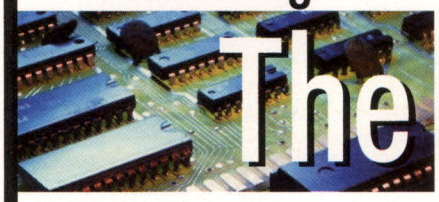

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Claranet	✓	✗	✓	✗	✗	£4.26	£4.26	£4.26
BT Internet	✓	✓	✓	✓	✗	£129.95	£129.95	£129.95
BT Click	✓	✓	✓	✗	✗	£7.20	£103.68	£207.36
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nalist of the Year award in 1996. And I owe these small amounts of fame and fortune to the Internet. Now I'm happy to pass on my tips to help you do the same.

Have you got what it takes to be famous? If you're a big-headed, egotistical, self-opinionated loudmouth, it helps. So does a bizarre haircut – it certainly worked for me. But don't worry if you're a nice, quiet, modest soul with a curly perm – you too can make it by simply inventing an online persona. This whole area of personality choice is vital to your venture. You need to stand out to succeed.

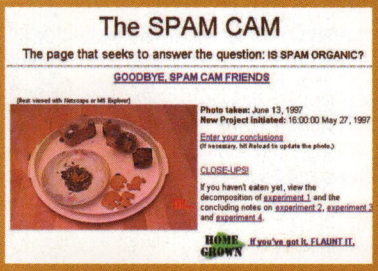
Let me give you an example – the Web cam route to fame and fortune. You could choose to install a Web cam that points at your desk in the office, broadcasting the boring day to day life of a nerd at work. But don't be surprised if the only people who send you fan mail are other boring nerds at work. The odds of you achieving fame this way are longer than the National Lottery.

You could choose to install a Web cam that points at your bedroom, broadcasting you wandering around naked, sitting topless at your dressing table and brushing your hair. If you're the nerd from before, your odds still aren't great, but if you're a young and sexy woman, you might generate millions of hits per day. You can then wait for the highly lucrative revenues from advertising and site subscriptions before getting your own TV show. Take a look at JenniCam (**www.jenni cam.org**) for proof that being bold works, and being naked works even better.

If you're not prepared to bare all, you'll need attention-grabbing personality by the bagful. You also need a USP – unique selling point – something that will get people looking for you instead of the other way around. It doesn't have to be rocket science. Your USP could be a collection of miniature bottles (**http://web.ukonline.co.uk/members/chris.r7/index.htm**), a Web cam pointing at decaying tinned meat (**www.fright.com/spam/spamcam.html**), or your entire house wired to the Internet (**www.icepick.com**).

Once you've got your USP-laden Web site and invented your alter ego, the next step is to find your audience. Or more to the point, to make sure they can find you. This is harder than you think – dedication and hard work are helpful, as are brazen cheek and a willingness to happily bend the truth.

Even when she's not in, the Web site is still making money and fuelling her fame



Two years of rotting Spam made this site world famous, and now acts as free advertising to another project

At the Icepick site, a guy has wired his house to the Net, including the toilet – he even keeps log files of the last dozen flushes

Miniature bottles, lots of them, maybe not everyone's cup of Crëme de Menthe, but a USP if ever there was one

You really need to distribute the address of your masterpiece far and wide. Cross-fertilise by linking with any sites you can call similar (make sure they'll link back to you first – there's no point in helping someone else for no reward). Apply for as many Web awards as you can – the Awards Jungle site (**http://awardsjungle.com**) will enter your site for 150 of them.

But there's no guarantee you'll win, so why not take a shortcut and invent your own award? Design a logo, put it on your Web site and proclaim your success to the media and the rest of the Net. Bullshit is always a handy weapon in the battle for online stardom.

Use the power of email and search engines to the absolute maximum. Never

Five easy steps to shameless self promotion

1 Get noticed. Be nice but noisy, have opinions on everything, help out wherever you can, contribute to discussions, let the world know who you are. Spend half your life online – you must be prepared for sacrifice.

2 Reach out of the Internet and into the real world. It's ironic, but if you want to be a big deal online, you need to make some impact offline. Offer your story to the media, pester magazine editors (Not this one – Ed) for reviews and commissions to write about whatever it is you do, apply to appear on TV talk shows, interest those who are interested in the Net.

3 Don't settle for mediocrity. Competition online is intense, you need to be above average in what you do. Bold statements, bold designs and bold marketing strategies are required. Think big and don't settle for 'nearly' – nobody knows anyone who is 'nearly famous'.

4 Keep one step ahead by using search engine trickery. Change the title of your site regularly to fool the robots into thinking a new site has appeared, resulting in more than one listing per index. Use punctuation and exclamation marks before your company or personal name on the page – this puts your Web page nearer the top in a search index. Make more than one copy of your home page, with slightly different keywords or content – this will get multiple search engine hits.

5 Innovate rather than imitate, but if all else fails, go naked with a Web cam for instant online stardom.

stop bullshitting and never stop telling people about your wonderful and unique site.

You'll need to invest your time, and a little money, in your enterprise, but you can really make it pay once you've got all the basics. Convince your local newspaper you're an Internet expert, and show them all the awards your Web site has won to prove it. Tell them you'll write a column for the *Lower Widdle Times* each week, detailing great sites, for nothing – but insist they publish your picture, name and URL. They'll jump at the chance. Do this for a month and then use your clippings to convince magazine editors of your credentials: "I'm the Internet expert for the *Lower Widdle Times* – I have an idea for a feature".

Pitch it right, write it properly and do it for peanuts, and you can call yourself a freelance journalist. Create a site or two for your mates and pretty soon you'll be a freelance journalist AND an Internet consultant. Use your new-found credentials to push your rates up and get work for more magazines and start on PR companies.

Keep this up for long enough – a year or so should do it – and you'll be an Internet guru. Now phone as many TV production companies and radio stations as you can, let them know you're an Internet guru available for expert comment. This can pay remarkably well – £50 plus expenses for 10 minutes of waffle on the radio, but more to the point, it confirms your guru status. You're now firmly entrenched in the stardom spiral, and on you way to becoming the Dale Winton of the Web.

Effective Web promotion

As Web publishing becomes easier and cheaper – even free – the opportunities to use it for purely egotistical purposes increase. Anyone can publish on the Web now, with some pretty shocking results. If you're going to use the Web as an effective medium for self promotion, you've got to get it right from the start.

I'm not saying a crap Web site isn't an option. You could aim to produce the world's worst Web page and exploit it as your unique selling point, but boy would it have to be crap. It's far easier to publish an average to good site, exploit it as much as possible and add value where you can.

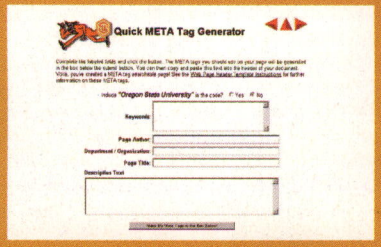
Internet Magazine regular Mike Slocombe is a master – his pages are well designed and have addictive and valuable additions, such as the Slap A Spice Girl game at www.urban75.com. A Web designer with a flair for the unusual can fuel public demand to great effect – Mike definitely has what it takes.

Don't be afraid to fail 99 times, because you might strike gold on the hundredth try. Don't spend all your time in front of the mirror practising your rock star pout for when the newspapers come knocking, or they never will. Sit at your computer and practise your site creation skills – the pout will come naturally.

Most people start their Web-based journey with a search engine or directory site, so it's vital to get noticed, get listed, and get the hits. There are a number of ways to achieve this. You could use one of the many services such as Submit-It (www.submit-it.com) which sends your details to 400 search sites. The trouble is, this costs money and there are no guarantees you'll get well placed, or placed at all. Alternatively, you could go and register yourself with as many search sites as you can find, but this is slow and repetitive for a star in the making.

The most effective method is a combination of the manual donkey work and the Tag technique. This involves understanding how search engines log and rate your Web pages. Many will use a crawler or software robot to go out and search the Web for new and updated sites to add to the search database.

Keep your home page as short as possible and restrict your page to a short description of your site, with as many relevant META Tags (keywords picked up by search engines) as possible. Don't use the 'repeat a META Tag 1000 times' approach – the search engines might blacklist you. Visit a META Tag generator like the one that can be found at http://osu.orst.edu/aw/promote/search/qmeta.htm, which will generate suitable META Tag HTML for you to cut and paste into the top of your home page code.



The easy way to increase your search site status – an instant META Tag generator

The email effect

Back in 1994, US immigration lawyers Canter & Siegel invented spamming and hit more than 5000 Usenet newsgroups. They claim to have turned the $20 spent on an ISP account into $100,000 of business with one night's work. The story was front page news across America – the couple appeared in magazines and on TV, and even secured a publishing deal. Yet what they really achieved was infamy. Take the spamming route now and you'll be lucky to achieve even that.

No, you need to think smart, you need to think added value. Make sure your email address is promoted, include it on your site, on every piece of personal and professional stationery, and advertise if you can afford it. But remember that an email address is about as useful as a one legged man at an arse-kicking party if you don't read and reply to the messages.

Once you have enough people interested in your site, the next step is a mailing list. Use it to distribute update messages or a newsletter about your latest efforts. Use the Blind Carbon Copy (BCC) feature of your email client to send these postings to every newspaper and magazine editor you can find. It only takes one interested editor to feature your site, and your hits will explode. Journalists are always looking for copy to fill gaps on their pages, and in their knowledge, so exploit this to your advantage!

Stargirl – using the Web for fame and fortune

Making a name for yourself

Getting it right – Stargirl.
www.stargirl.co.uk

Stargirl were an unknown band doing the rounds of pubs and clubs trying to get a record deal – until the band's computer supremo, Seb, decided to use the Internet.

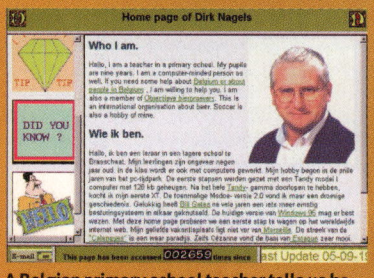
A chat forum came first, with details of gigs and samples of songs. Then came a slick Web site and a mailing list to keep fans up to date. More than 4000 copies of their first single on CD were sold from the site. And the fame is global. Someone from the US ordered 2000 copies!

The band are now making enough money to manage themselves. They have big gigs lined up and have played on TV and radio. Booming sales and 1000 visitors a day have made Stargirl the most successful unsigned band on the Internet.

Getting it wrong - Dirk Nagels

Yahoo! has more than 70,000 sites listed under the Society and Culture / People / Personal Home Pages category – I picked Dirk Nagels' site at random.

It's not the drastic use of frames – six on the home page or the scrolling ticker which says the last update was three months ago. It's not the tip of the month that reveals Dirk likes to cook. It's not even the annoying animated 'Did You Know?' GIF, which takes you to a frame which tells me Belgium is famous for cartoon strips.



A Belgian primary school teacher tells us he likes beer. Yawn!

I'll tell you what it is – dull, dull, dull. And, Dirk, it makes me think you must be dull too.

Davey Winder is a freelance writer with a cult following and a larger than normal ego. (Cult following? That's like 'nearly famous', right? – Ed).

take a closer look at Netkonect...

At Netkonect we are known as the 'Backbone Provider'. We supply the connection for other service providers.

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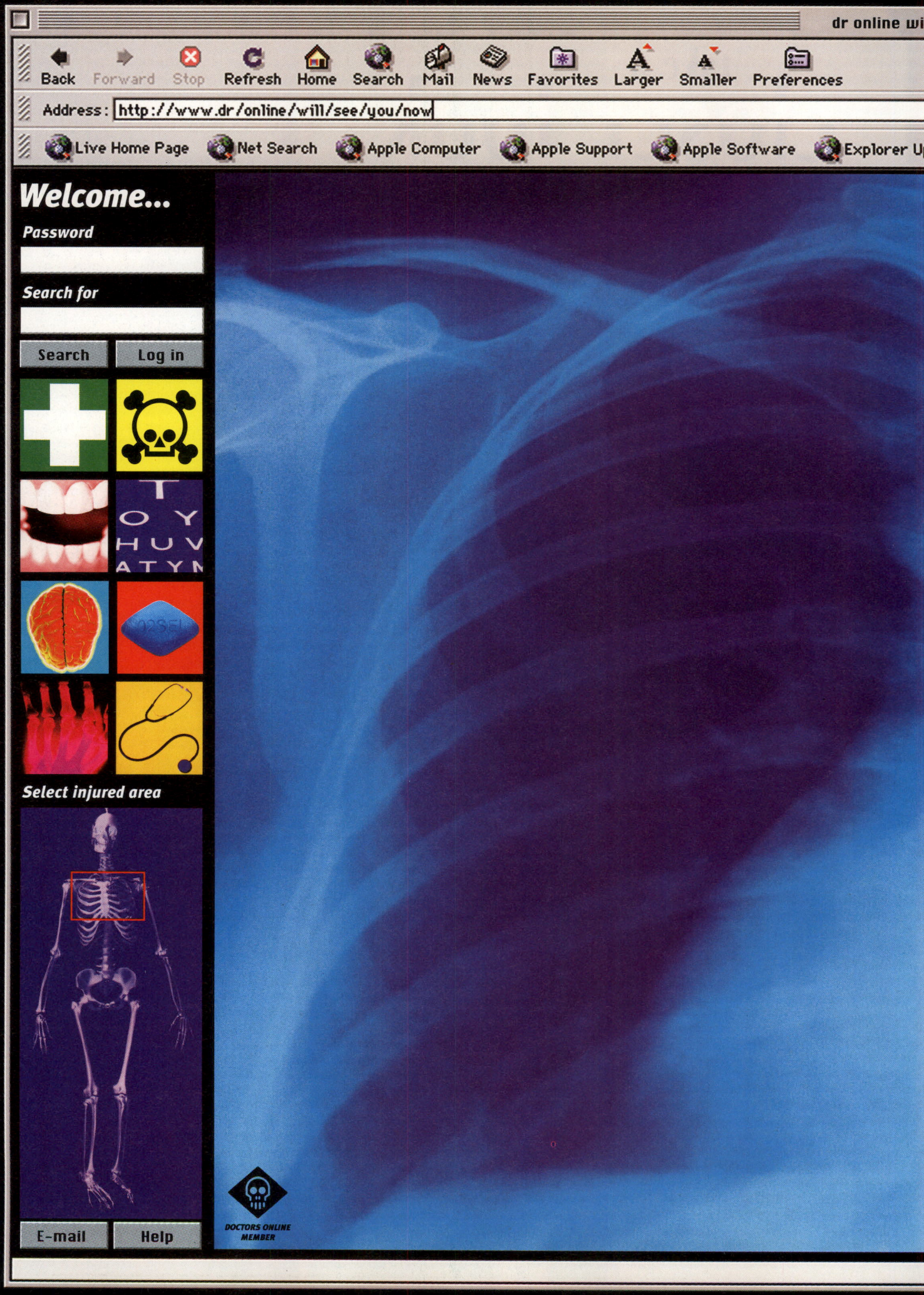
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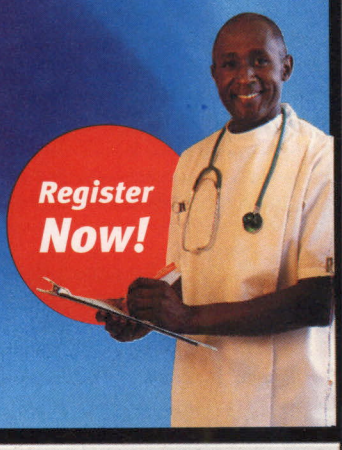
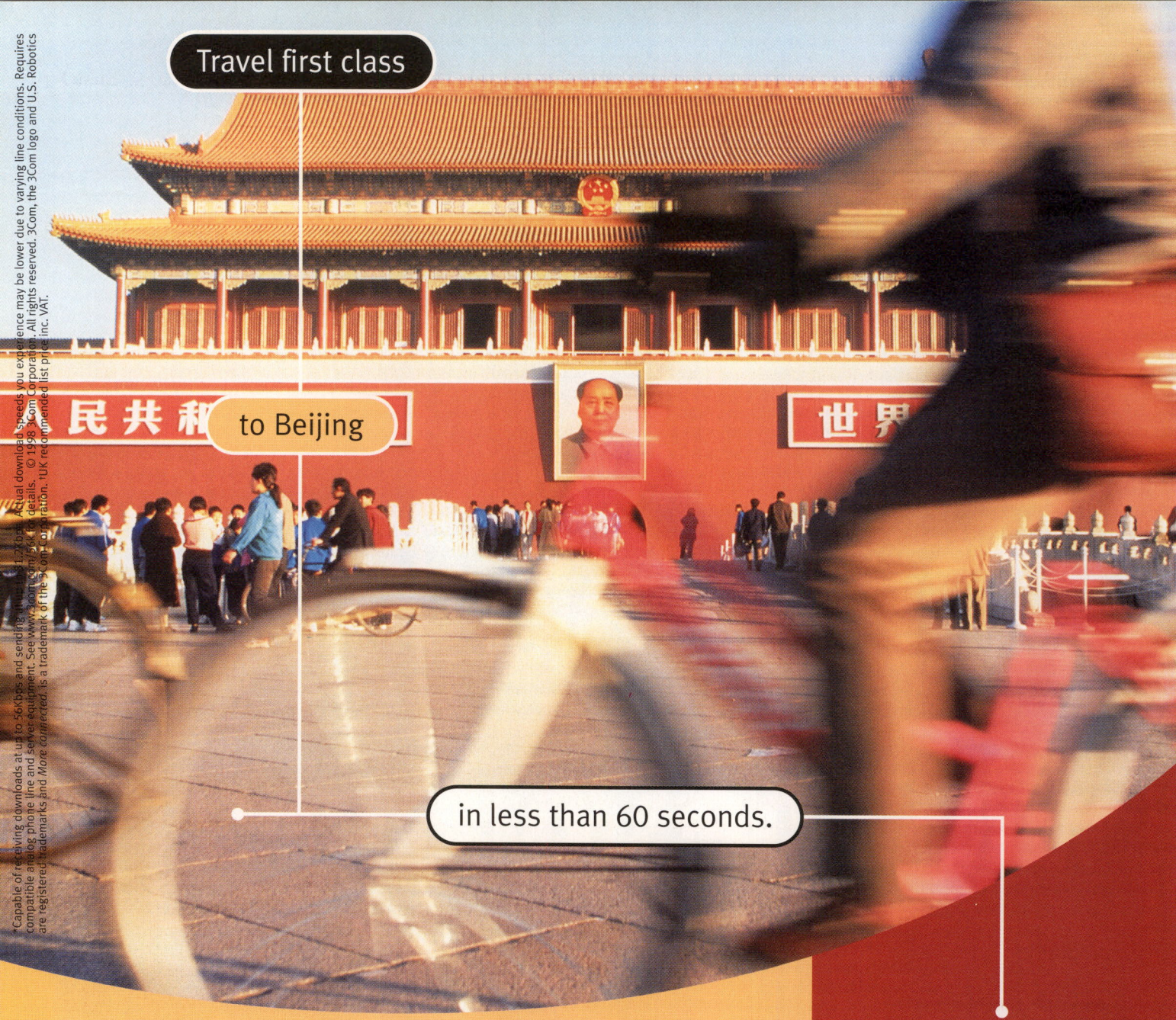
Help
DOCTORS ONLINE MEMBER

Dr Web will see you now

The Internet is potentially the most exciting development in medicine since antibiotics. People will learn to treat their own illnesses and injuries. OK, so they might die waiting for the streaming video of Do Your Own Appendectomy, but think of the cost savings. Bill Thompson looks at online medicine





*Capable of receiving downloads at up to 56Kbps and sending at up to 33.6Kbps. Actual download speeds you experience may be lower due to varying line conditions. Requires compatible analog phone line and server equipment. See www.3com.com/56K for details. © 1998 3Com Corporation. All rights reserved. 3Com, the 3Com logo and U.S. Robotics are registered trademarks and *More connected.* is a trademark of the 3Com corporation. †UK recommended list price inc. VAT.

Now you don't have to wait to visit all the fascinating places on the Internet. Why? Because the new 3Com U.S. Robotics 56K **3Com U.S. Robotics** Faxmodem* will take you to the Net faster than you ever thought possible. Better still, it's been specially designed to be easy to use and to provide faster connectivity and more stable connections. Which is probably why 3Com U.S. Robotics 56K modems are the best-selling modems in the world. But the best news is the price - just £85.† So why wait any longer to enjoy the best the Internet has to offer? Buy the new 3Com U.S. Robotics 56K Faxmodem today.

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Last November, the Boston-based World Clinic (**www.worldclinic.com**), became briefly famous after it emailed a solo Russian yachtsman with advice on how to drain an abscess on his arm. Webcasts of surgery (**www.onlinesurgery.com**) are becoming almost commonplace.

Away from these attention-grabbing stunts, health professionals are turning to the Net for their day to day work. The big healthcare companies and the NHS are also starting to take online activity seriously. And patients are finding and obeying medical advice online, even though much of it is contradictory, unverifiable and potentially dangerous.

Online medicine today

It's early days, with most activity confined to online information for patients and an interesting collection of poorly integrated services for doctors and medical administrators.

Health Secretary Frank Dobson has promised to spend £1 billion between now and 2005 on information technology in the National Health Service. A lot of that is going on networking, so things are likely to change.

In America, private health companies are beginning to realise that the people who shop, bank and trade stocks online could also be encouraged to get their health services – the ones that don't involve sticking needles in your arm or tubes down your throat – over the Internet. Doing it this way could save a lot of administrative time and money.

Bell Atlantic (**www.ba.com**) has recently launched what it calls a 'virtual medical practice', offering doctors online access to patient records, lab results and prescription services. Jim Caldas uses the system and he's a fan. "Optimum performance is driven by the best clinical outcome, the best service quality and cost efficiency," he says. So maybe even the NHS could save money by using IT - eventually.

NHSNet

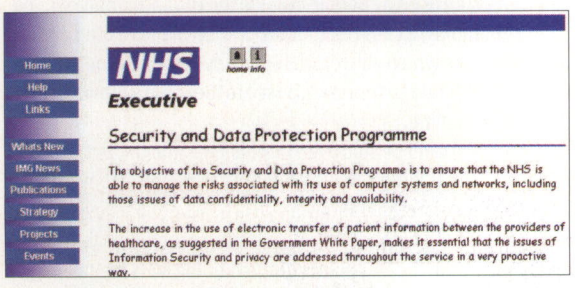
But the most important component of the NHS Internet strategy isn't part of the Internet. NHSNet is a privately-run intranet that connects National Health Service hospital trusts, health authorities, GPs and other health professionals.

There is a gateway between the NHSNet and the Internet, for email to pass in and out of the NHS, and to let NHSNet users surf the Web. But it's one-way, and well protected.

Health Secretary Frank Dobson has committed the NHS to getting all 26,000 GPs on the network by March 2000, with appointment booking and referrals to specialists online by March 2002.

In Manchester, GPs already book ambulances using a Web browser, and in Glasgow over 200 GP surgeries get test results for their patients delivered by email direct to their surgeries.

These same technologies could be extended to provide a service to patients over the Internet, offering them access to their results or prescriptions through a home PC or set top box. But at the moment the investment is aimed at helping the professionals to work together.



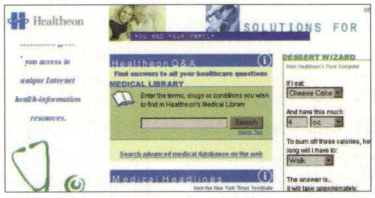
The NHS Executive runs NHSNet, a privately-run intranet

The main change for patients will be to add Net access to the NHS Direct service (a telephone helpline for NHS patients) and set up a Web site of medical resources, a sort of National Grid for Healing, like the US-based HealthFinder site (**www.healthfinder.gov**).

Going private?

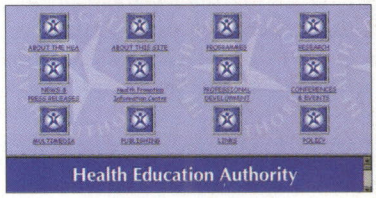
Websites abound in the private sector. The BUPA pages (**www.bupa.co.uk**) will sell you travel insurance, help you find your nearest BUPA hospital and offer advice on healthy living. In the US, where any way to speed up treatment or cut administrative costs is seized upon, things are even more advanced. Professional medical services range from advice on self-treatment to online GPs who will prescribe direct (see Viagra box on page 50).

One of the most interesting developments has been the emergence of the healthcare portal – a kind of NetCenter or MSN with bedside manner.



Healtheon offer medical advice for the public, and services for US hospitals

The biggest is the Healtheon Corporation site at **www.healtheon.com**. It offers links to GPs, hospitals, pharmacies, laboratories and, of course, insurance companies. At its HealthCenter, you can use the Food Computer to figure out how long you would have to walk to burn off the calories in your last cream bun, or find out about rare diseases your GP might miss. This stuff is perfect for a hypochondriac nation. You can even check out your lifestyle and do an online health risk appraisal.



The UK's Health Education Authority isn't quite as comprehensive

Other health professionals can customise Healtheon content for use on their own sites. Insurance claims and prescription refills will soon be processed online.

Among the UK-specific sites for the general public, Patient Information Publications at **www.patient.co.uk**, run by two GP surgeries in Newcastle-upon-Tyne, is reasonably comprehensive and worth a visit.

What the experts say

At the London Institute of Hygiene and Tropical Medicine, Dr Mary Cameron is researching the impact of house mites and other factors on asthma. She is dubious about the value of the commercial sites, claiming that "some of the sites set up by companies should be avoided because they ask for registration details... people are then bombarded with marketing information".

There are hundreds of sites dealing with asthma and allergies. A variety of product manufacturers' sites (**www.asthmaproducts.com**) offer hypoallergenic pillows and even an asthma medicine key chain holder.

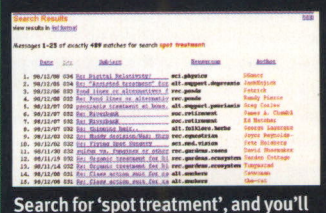
Dr Cameron believes the real value of the Net in her field is to give people access to properly reviewed medical research. "Like using any library," she cautions, "there are good journals and bad and you've got to explore it for yourself."

This point is echoed by Paul Fawcett, information officer at the British Heart Foundation (**www.bhf.org.uk**). "You ➢

Getting rid of spots

Many 13-year-old boys might be tempted to head online in search of help, rather than face the embarrassment Boots the Chemist. A search of USENET via DejaNews (**www.dejanews.com**) found 471 articles relating to the search term 'spot treatment'. One chap revealed that his skin problem had been cured by focusing the sun's rays on it with a maginifying glass. Halfwit.

Sadly this kind of medical advice is common online. There are cases where an astute online observer has spotted a medical condition and organised help in time to save someone's life, but discussion groups are better for people who just want to share their thoughts and counsel each other.



Search for 'spot treatment', and you'll get lots of responses

can find a research study to make any medical case you want, but it won't tell you whether the people doing the research are credible or whether it's subsequently been disproved."

The British Medical Association told us "It would be unwise for a patient to believe everything they read, and we always recommend they see a doctor if they have a problem."

The UK Health Education Authority offers general health information rather than specific medical advice. They told us, "All the information we provide is pre-

"We send a lot of Viagra orders to the UK – we never have any problems and nothing's ever been returned."

tested, checked and researched, and we monitor sites that link to us in case they are inappropriate.

"A link from a site promoting alternative therapies might be welcome, since we want as many people to see our information as possible."

Alternative medicine

Those on the fringes of medical treatment have eagerly embraced the Web. Perhaps the most extensive are the sites for cancer sufferers, where many alternative therapies are offered.

New Approaches to Cancer (**http://ourworld.compuserve.com/homepages/colinrr**), offers its treatments to complement conventional medicine. But the Cancer Healing site of Ryke Geerd Hamer (at **www.geocities.com/HotSprings/3374/index.htm**), offers an incoherent mysticism, claiming to have developed "a biological system that's part of human, animal and plant hereditary disposition of our reaction to suffering influences."

Sites like this aren't illegal – after all, they're not prescribing medicine – and they cannot be closed down just because their theories are bonkers, or even bordering on the dangerous.

Getting drugs online

Although it's illegal to advertise prescription medicines for sale in the UK, this law doesn't apply in other countries. In 1998, the US Food and Drug Agency was forced to allow drug advertising. This could make online health and drug advertising a $250 million market by 2002.

Viagra

Viagra was the medical story of 1998. No newspaper editor could resist punning headlines and in depth investigations of its effectiveness.

Although it has been licensed in the UK since September, it's not generally available on prescription within the NHS. It can be prescribed privately and the little blue pills are also available on the black market. The Medicines Control Agency even has a special inquiry unit looking at Viagra, working with Trading Standards Agency officers to stop illegal trade in the drug.

But a quick trip to Private Medical Services (www.viagra-helps.com) is all that you need. The site is based in the US and has a three step process for getting the drug. First you have to agree to a disclaimer of liability that exempts the suppliers from responsibility if it either kills you or doesn't work. Then you fill in an online medical history and order form, which includes a True/False box for the statement: "I feel that I am incapable of having normal satisfying sex without prescription medication." And then you pay.

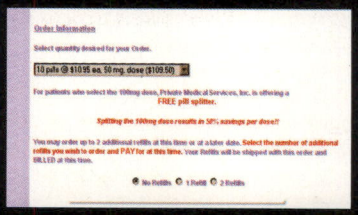
According to the company helpline, shipping to the UK is not a problem. "It takes an extra couple of days to send to the UK. We send a lot of orders there - we never have problems and nothing's ever been returned," said their telephone sales operator.

A spokesperson for the MCA confirmed that selling a prescription drug in this way is illegal, although it is not an offence to purchase. "The company is still breaking UK law," she said.

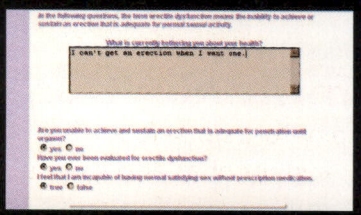
It's not feasible to intercept every package sent from the US looking for prescription medicines. So just as most people who buy CDs from the US manage to avoid paying duty, so those in need of a stiffy can get their Viagra by post.

The viagra-helps home page

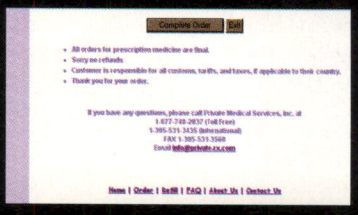
Step one: waive their liability



Step two: how much do you want



Step three: tell them why you need it



Step four: click and its yours

There are many alternative suppliers online

As can be seen anywhere on the Net, and the services they provide could easily be used by people outside the US. Later this year, the US-based Home Access Health Corporation plans to offer an HIV testing service which will return results over the Internet. Someone in the UK could get a test kit, post it to the company and receive their results online.

Hormones can't be sold over the counter in the UK, but they can in the US. UK customers may be tempted to buy melatonin, a hormone that regulates metabolism and is believed to relieve jet lag. However, the Medicines Controls Agency, responsible for licensing medicines in the UK, points out that doing so is illegal –

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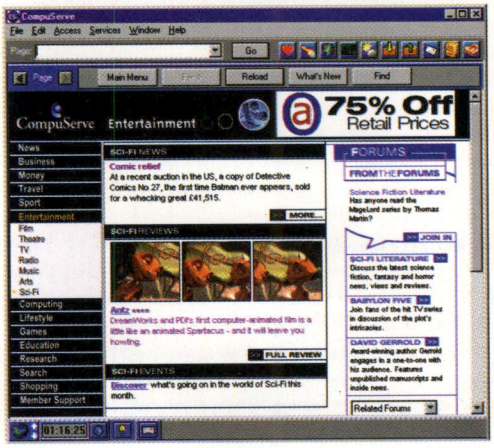

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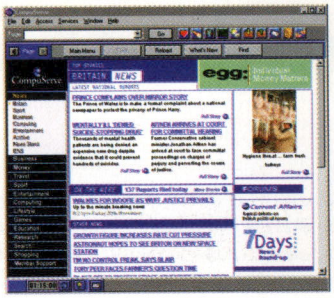

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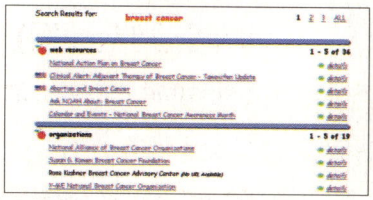
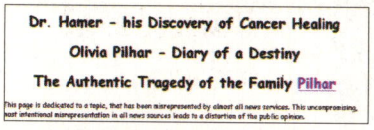
The GP-UK site is a discussion space for doctors

The US Government's own health portal...



...with a good search engine at heart



Ryke Geerd Hames cancer page is the outlet for his 'radical' views

for the seller, not the buyer – and strongly advises against the purchase of any medicine over the Internet.

Melatonin and other hormones are available from sites such as the Vitamins Network (www.vitamins.net). The melatonin is imported from Switzerland, and will set you back $8.95 per 100 capsules.

How good is the information

A paper published in a peer-reviewed journal such as the British Medical Journal (www.bmj.com) should be worth taking seriously, while a GeoCities homepage won't carry the same weight.

It is also worth considering who links to whom. Both HealthFinder and the proposed UK NHS Web site will have hundreds of links to third party sites. It's reasonable to assume that some sort of checking and validation will take place, whatever the disclaimers about 'not being responsible for the content of third party sites' say.

In 1997, the Child Health Institute in Milan published the results of research into the reliability of the health advice on the Internet. It looked at one specific area – advice for parents on how to treat young children with fevers.

Of the 41 sites offering advice, only four were medically correct and gave advice consistent with best clinical practice. As the authors put it, "This suggests an urgent need to check public oriented healthcare information on the Internet for accuracy, completeness and consistency."

J Muir Gray, director of research and development at the NHS Executive, wants to see some sort of quality control. He has called for a "knowledge hallmark awarded by an independent group of people evaluating information in an independent and disinterested way."

Futures

In December 1998, a Birmingham-based psychiatrist, Dr Russell Razzague, launched an online therapy service called CyberAnalysis (www.cyberanalysis.com), which uses Internet Relay Chat and email to let the patient and analyst talk.

The Net even has the potential to allow medical procedures to be done at a distance. This is called 'telemedicine', and a lot of research is going on into how effective it can be.

> "The idea of armies of businessmen walking around with heart monitors and logging on to an advice centre is not going to happen."

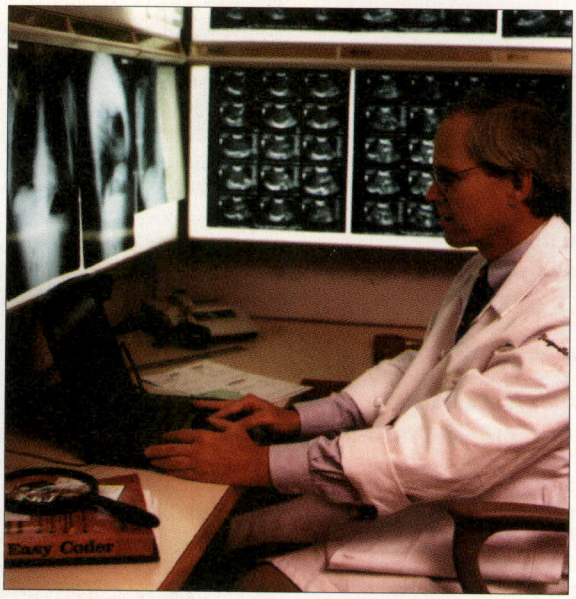
The UK National Database of Telemedicine at Portsmouth University (www.dis.port.ac.uk/ndtm/index.htm) lists over 60 projects, ranging from a radio-networked 'virtual' nursing home to a remote consultation service for GPs. None of the existing projects use the Internet, but all have the potential to move onto the public network.

Although there's a lot of interest in telemedicine, not everyone is convinced. At the British Heart Foundation, Paul Fawcett is worried: "The idea of armies of businessmen walking around with heart monitors and logging on to an advice centre is not going to happen. It's not an adequate substitute for on-going, hands-on work with a doctor."

But the massive cost savings of telemedicine mean it's already written into the NHS plans. The recent *Information for Health* White Paper says "telemedicine and telecare will undoubtedly come to the fore as a way of providing services in the future", and calls for telemedicine to be "considered routinely" in health authority plans.

It's hard enough to get a doctor's appointment these days. Once they're online and doing the email/chat thing, it could be even harder. But if it all works properly you could find yourself diagnosed with your medicines prescribed and on their way to you without having to set foot in a waiting room.

Just draw the line at the DIY vasectomy. im



At a Christiana Care Health System hospital near Wilmington, Del, radiologist Dr. Alan Evantash plugs his laptop computer in to Bell Atlantic's Physician Linkage system to compare X-ray results

Sites to try

There are hundreds of Web sites for medical information and services. For discussion groups on a specific topic try DejaNews (www.dejanews.com) to search USENET. Mailing lists can be searched at www.liszt.com. MSN, AOL and CompuServe all have health sections.

The British Medical Journal (www.bmj.com) is an excellent starting point for research – it also has a response mechanism. The GP-UK site (www.schin.ncl.ac.uk/gpuk/gpuk_home.htm) will let you listen in to what the doctors are saying. Private services can be found at BUPA (www.bupa.co.uk).

Get online consultations at World Clinic (www.worldclinic.com) and general advice at HealthFinder (www.healthfinder.com) or at the Health Education Authority (www.hea.gov.uk) To set up a hospital in the US or find out what that pumpkin pie could do to your arteries try Healtheon (www.healtheon.com).

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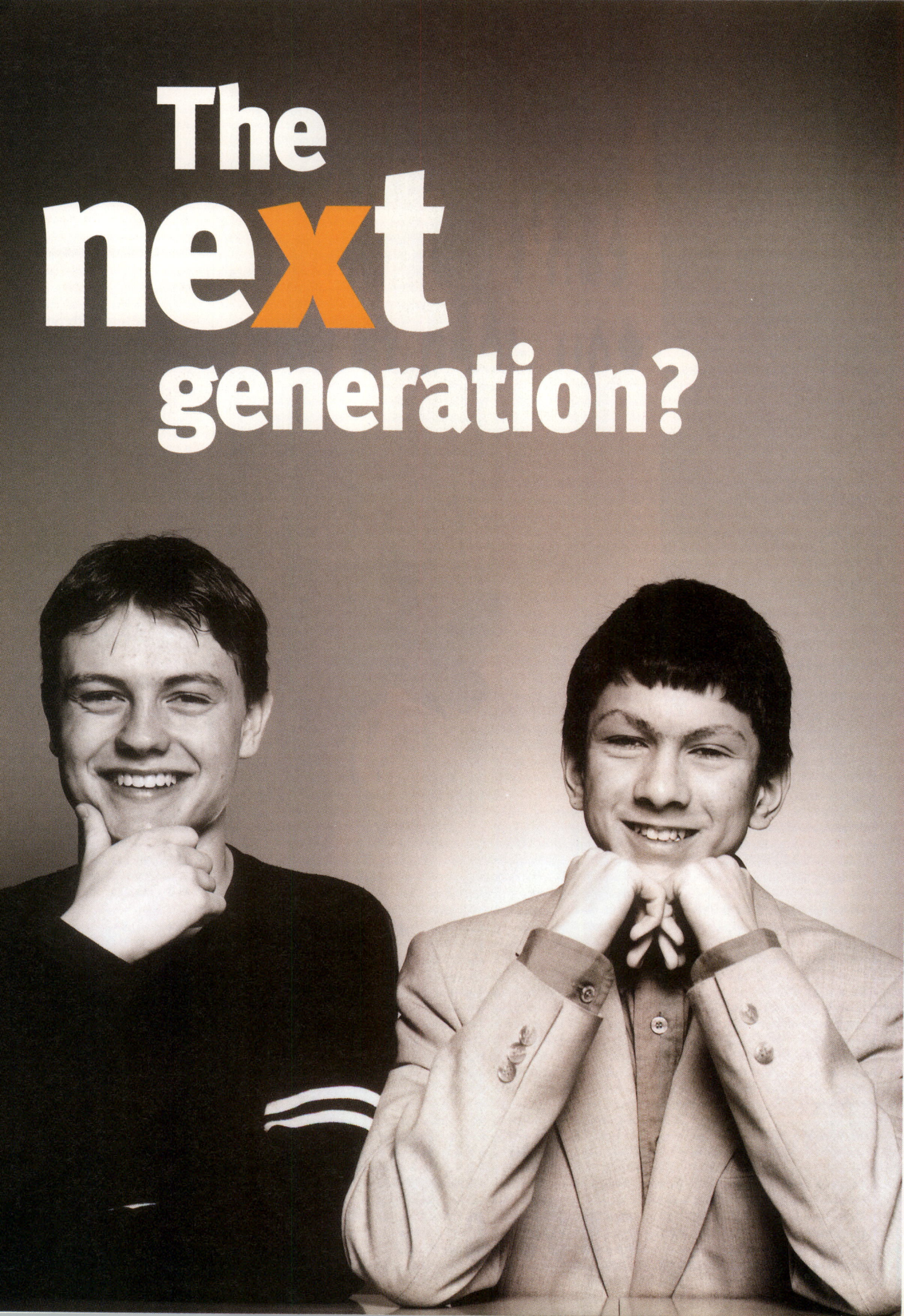
The
next
generation?

School's out but the Internet is in, and who gives a damn about homework when e-business is making you rich? Liz Walker talks to the baby-boomers who are making a killing in Internet commerce

Photography by Frank Rodgers

While other lads are hot-wiring Ford Escorts and colouring in the local bus shelter, a new generation of Internet entrepreneurs – none of them over 18 – are slaving over their VAT returns and providing online services for the international business community. And they're making a killing.

Do we hate them for achieving so much so young? You bet. Kindly Victorian philanthropists passed the Child Labour Laws to prevent this sort of thing.

These days, computer-literate kids don't have to go shinning up a chimney, they can exploit the Internet instead. It's clean, lucrative, educational and safer than a paper round. Their schoolwork is suffering, but who needs Geography GCSE when you've got the gateway to global business at your fingertips?

The anonymous nature of the Internet is responsible for the boom in kiddie commerce. "You don't need to meet people face to face, you can do business over the phone or by email," points out 15 year old Andrew Butt, the creative

"Some customers know how old I am..."

brain behind Internet marketing consultancy, Digital Solutions Ltd. He's been selling domain names for 18 months and now offers a full range of Internet marketing advice to businesses seeking a presence on the Net.

"Some customers know how old I am and many of them find it attractive that I'm so young. I won't generally volunteer the information, though. I send other staff and sub-contractors out on consultations, and my dad fronts any recruitment."

With low start-up costs and no mortgage or kids to feed, people like Andrew can run a business from their bedroom without expensive staff or office space, so they can expect to make a tidy profit from year one. His Web site is his shop window (**www.ds.to**), promoting his business creatively to a potentially massive global audience. He can look corporate without wearing a suit or driving a company car, and he doesn't even need a bank account – a building society one will do. And when you're 15, you can work around the clock without having to take time out to shave.

Only two legal technicalities hold Andrew back: until he's 17, he's too young to be the managing director of his own company, so he's had to hire a family friend to front the business from a tax haven on the Isle of Man. Secondly, Andrew is officially too young for his own electronic credit card ordering system. In fact, NatWest won't issue him with his own credit card yet, even though his turnover was £250,000 last year, and his Internet marketing consultancy is growing at an estimated rate of 40 per cent a year.

"I never had any specific plans when I started in business," he says. "Initially it was a substitute for a paper round, so I was only earning about £25 per week. But it quickly grew wildly beyond this as soon as I started to take advantage of the various business opportunities the Internet offers.

"I think a lot of young people have the necessary skills to start up in business, and could do the same as me. But I also think

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my success comes down to confidence, the ability to make decisions and also some freedom from parents. I know a number of people my age who are more creative than I am, but they're held back by having parents who believe standard education is the only way forward."

Andrew was allowed to leave school early to build up his business, and now employs a private tutor at weekends: "I'm mainly doing my GCSEs to satisfy my parents – mum in particular – and so I don't look completely stupid in terms of having no qualifications. The business always conflicts with my tuition, mainly because I don't find much time to do homework. My tutor works around this because she understands the situation.

"The main reason I left school early was if I'd taken the academic route through university, I'd be 22 by the time I got out into the business world. But this way, if I work hard, I'll be financially independent by then. I want to build up the company and get to the point where I haven't got to get out of bed to earn a living."

"I want to get to a point where I don't have to get out of bed in the morning."

As a callow teenager itself, the Internet has already won a reputation for nurturing and rewarding young talent like Andrew and has plenty of inspirational young role models. For instance, the two engineering students who founded search engine Yahoo! – David Filo and Jerry Yang – set up the company when they were still at college. Tim Dunton, 17 year old MD of Web services company Global Gold, has been hailed as Britain's answer to Bill Gates, who was only 20 when he founded the Microsoft Corporation in 1975.

Tim first discovered the Internet when he was 14. "My dad had an account at work, which he didn't realise he had. So I worked out what PPP he was using and set it up on my Mac at home. I helped my father's staff, at the University of Hertfordshire, to set up and use the Net, and I designed a Web site for his department." Tim quickly realised there was money to be made out of the Internet and that he'd be wise to capitalise on his own youth as a marketing theme. By setting up Global Gold, he cultivated a flurry of publicity in local papers, the national press and even got himself slots on TV to talk about the Internet.

In September last year, he launched a portal Net centre called 2b – a bespoke service for British Internet users wanting more personalised access to the Web, with maps, weather reports and a business directory. He's just signed a deal with Newswatch UK, which will provide a full service of news headlines and summaries every 20 minutes.

"2b gets about 2000 hits a month and has already grown by 40 per cent," he says. "We also set up reciprocal banner ad exchanges, creating links between small and medium-sized Web sites. For every two ads they carry, they're advertised on another site for free. The aim is to create more Net traffic within the UK."

The recent deal with Newswatch UK looks set to place him in Britain's big league of Internet players. As Newswatch UK's managing editor, Justin Temple, says, "2b is obviously going places and so are we, so it made sense to join forces. We were very impressed with Tim's mean and lean company which is run like ours. Now we're helping him to take on the big boys. No one will match his portal for a unique perspective into life in the UK."

Tim finds the American example deeply inspiring for his own business activities, but he wants to see more British entrepreneurs involved, especially in e-business. "Young people are getting into business early because the Internet encourages people of my age to develop business acumen. I also believe that in the 1990s parents are more encouraging with this type of business route rather than traditional ones."

Although Tim has already quit his A-level course to concentrate on building up his business, 17 year old Jonathan Lilley, MD of Channel Media Ltd, is still trying to juggle school and work.

"I'm fitting my A-level studies in with difficulty," admits the young entrepreneur, due to launch his first interactive music Web site (**www.hyperlyrical.com**) in March. "I'm only studying two subjects, so I've got a bit more spare time. I find I can study six hours a day Monday to Friday, leaving the evenings and weekends free to run my business. If I spend the time over the next few months setting up, then by the time I sit my A-levels in June, Hyperlyrical will be up and running. But just in case it doesn't work out, I've taken a year's deferred application to the University of Westminster to study for a media and business degree. I like to keep my options open."

Andrew and Tim have parents with a business background to offer practical help and advice on running a company – Andrew's dad is an experienced accountant of 20 years' standing and Tim's father lectures in marketing and small business management. But Jonathan had to work out the business side for himself, using an information pack from Companies House, and observing the commercial operations of other music Web sites.

"I've always had a personal interest in music – rock, indie and pop – and I set up the company around it. I'm in talks with CD retailers to sell CDs cheaply over the Internet, and because I've got low administration costs, I can offer them at a lower price than the high street."

Like Tim and Andrew, Jonathan has learned by observing live Internet examples. "Most of the current music magazines on the Internet are fairly niche, such as the fanzine Web sites people set up for specific bands. Then there are sites with really big backing, such as Music 365 (**www.music365.co.uk**) and the online products of magazines such as *Q* (**www.qonline.co.uk**) and the *NME* (**www.nme.com**).

"I intend to be one of the first magazines published solely on the Internet, which can be viewed for free, but where you can buy CDs direct from the site and advertisers. I've done some market research too. Dotmusic.com gets about 160,000 hits a month, though it's difficult to audit Web site hits as you can't tell how

Name: Jonathan Lilley
Age: 17
Qualifications: Seven GCSEs, studying for A-levels in geography and computing.
Parents' jobs: Dad's a security officer, mum works with handicapped adults.
Nature of Internet business? Electronic publishing: produces Web sites using subcontracted design companies.
Brothers or sisters?
None.
Favourite TV show? *Have I Got News For You?, They Think It's All Over*
Favourite car?
Ford Puma
Favourite band?
The Corrs
Have you got/had a girlfriend?
Not at the moment
Favourite Web site?
www.news.bbc.co.uk
What do you spend your money on?
Music and going to gigs

Name: Tim Dunton
Age: 17
Qualifications: "Work and A-levels were conflicting too much, so I quit."
Parents' jobs: Both teach. Dad is a lecturer in marketing and small business management.
Nature of Internet business? Parent company of portal Net centre 2b – a bespoke service for British Internet users.
Do you have brothers or sisters?
One brother, aged 30.
What's your favourite TV show?
Brookside – it's good because it's so shite
Favourite car?
Jaguar XJ8
Favourite band?
R.E.M.
Have you got/had a girlfriend?
No/Yes
Favourite Web site?
www.2b.co.uk
What do you spend your money on?
I was taking a nice salary, but since last year I've put all the money back in to increase profitability in the long run.
(*So he hasn't got any then* – Ed)

many pages people are looking at. Our advantage over sites like Dotmusic.com, which is one of the biggest, is that our band coverage will be a lot more varied."

"In the music industry, youth is a positive asset. There are so many young people out there being successful that my attitude is, if they can do it, so can I. It's all about young people going for it and this gives me inspiration and confidence.

"Besides, no one really minds how old you are in the music industry. Bands are often my age or even younger. Their reaction when they meet me is usually just 'Hello, pleased to meet you' – nothing specific to my age. Record label advertisers aren't too worried either. Some of them know I'm only 17, but the important thing with my business ideas is they can see what's in it for them, so they don't look at my age as a limiting factor."

When it came to registering Channel Media Ltd at Companies House, he found it staggeringly easy. "They sent me an information pack on how to do it. When you're working with big record companies such as Sony and Virgin you need a corporate identity so they take you seriously."

Name: Andrew Butt
Age: 15
Qualifications: Studying English, maths, science and French GCSEs for about four hours a week with private tutor.
Parents' jobs: Dad has been an accountant for 20 years and now handles the financial side of the business.
Nature of Internet business? Primarily involved with giving advice on Internet marketing strategy, selling domain names and servers and general connectivity.
Do you have brothers or sisters?
One sister – Rachel, aged 13.
What's your favourite TV show?
Neighbours, *Home and Away*
Favourite car?
BMW Z3
Favourite band?
General chart music, Celine Dion
Have you got/had a girlfriend?
No, but I've had a couple and I've got friends who are girls.
Favourite Web site?
www.moments.org
What do you spend your money on?
Eating out very frequently at Pizza Hut, and going to the cinema. I probably spend £100-£200 a week on entertainment. I'm moving to the Isle of Man soon and will have to pay for my own flat, living expenses and a weekly return flight to the UK. Also, I plan to buy a nice car and I'm saving for a helicopter.

But while these teen privateers get rich quick on the Internet, there are two disturbing aspects to consider. One is that these lads have mostly rejected formal education in favour of finding success at the more *laissez faire* University of Life. Does this highlight problems with our beleaguered educational system in the UK? We already know our underfunded State schools don't have the necessary facilities to equip pupils with e-commerce skills, and there are plenty of Net-phobic teachers and careers advisors for whom the idea of surfing induces the collywobbles. Shouldn't every school hire the services of at least one part-time Internet mentor?

The other problem is that all three interviewees are happy to spend an average of 50 hours a week working on the Internet, with few external activities during their screen breaks. On the face of it, this antisocial, sedentary lifestyle can't be healthy.

"I don't have a lot of leisure time," admits 15 year old Andrew. "I wake up at 6.30am and I'm working by 8.30am until about 6pm. I've been working every week so far, though I try to get out to see clients. I do like to watch *Neighbours* and *Home and Away* though – I'm easily distracted. I'll watch the soaps when I'm supposed to be doing my homework!"

Tim Dunton works around 60 hours a week setting up his online services, and Jonathan Lilley puts in between 40 and 60 hours a week, plus his A-level studies. With only the occasional trip out to meet clients, surely the workload must be crushing?

"I'm looking forward to the point now where I can delegate more, and have more of the system automated – such as electronic ordering for example," says Andrew. "Carrying all the responsibility is a real headache, and I can't take a day off on a whim. I don't like to spend the entire weekend working, but there are always things that need my immediate attention, so I usually end up working. I really enjoy my work, and it's really what I'm living for at the moment, although I'm looking forward to the time when I don't have to work – hopefully in the next 10 years."

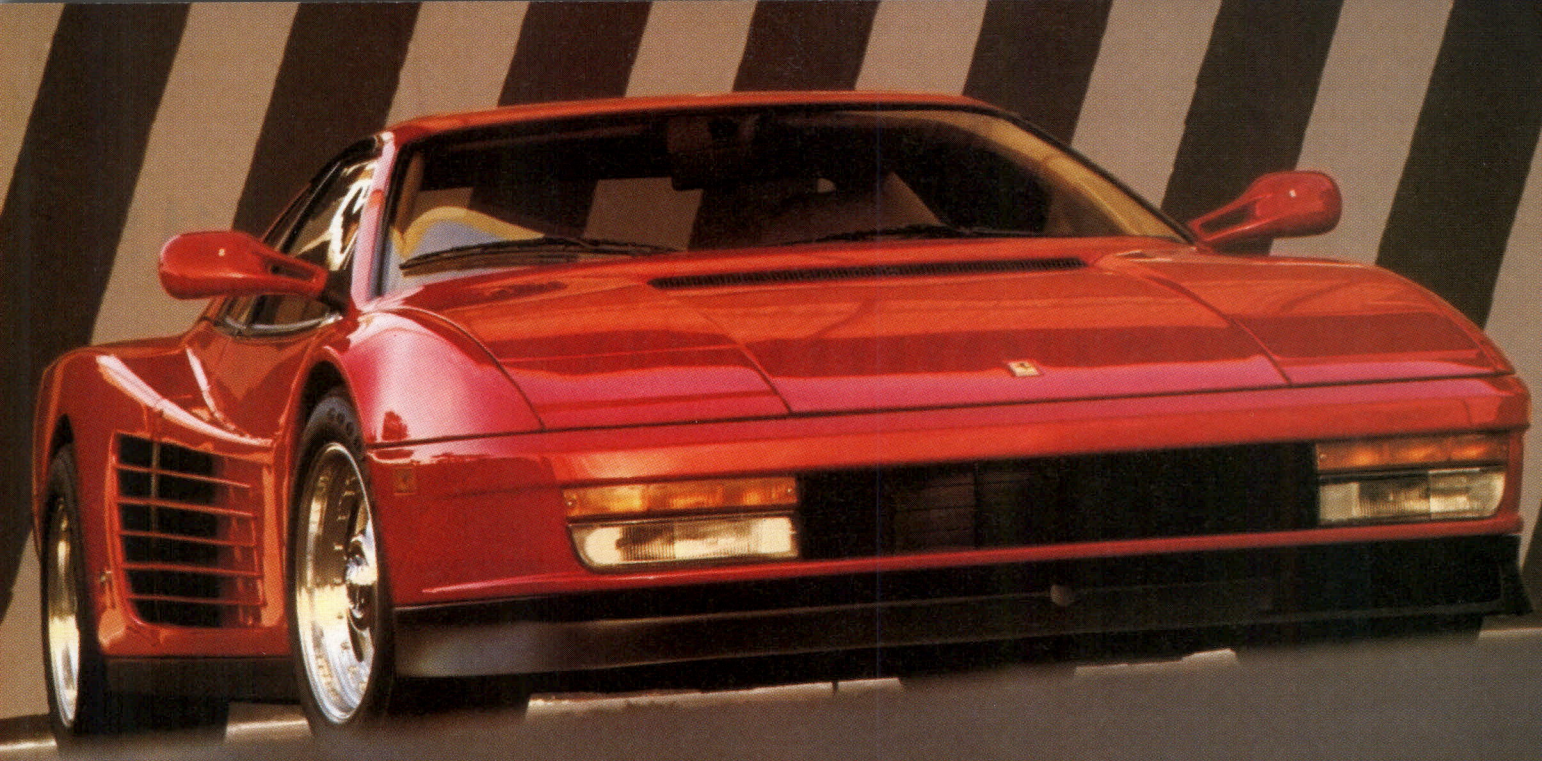
As for their short-term future, it's curious but symptomatic of homegrown e-business that all three young entrepreneurs have plans to remain small, in terms of staffing and premises. Staying lean and mean is the most recession-proof way to secure a good living, and these kids have already learned the value of having low overheads. "I'd like my company to grow – perhaps with 10 employees," says Jonathan. "If it's going to grow, I'll have to develop more Web sites and move into new areas. Ultimately, I'd like my own TV production company."

"I don't want to run a huge company," says Andrew. "I want to be in a position where it's running itself, so if I want to go travelling at any point, I can come back and take control again. I wouldn't want to expand beyond 10 people. The way forward is to increase the client base and get more selective, charging bigger companies more for a higher quality product."

"When you're working with Sony and Virgin you need a corporate identity so they take you seriously."

The immediate future of British e-business looks day-glo bright, and these precocious professionals are certainly doing the right thing at the right time. "Within a few years I think Europe will be up to the same sort of Net size as America," says Tim. "I'm part of the first wave of Internet entrepreneurs in Europe."

They're irritatingly smart kids. Even if the pressure and responsibility get too much, they still have time to make and lose vast fortunes, and still get back online before they're 30. Bastards. im



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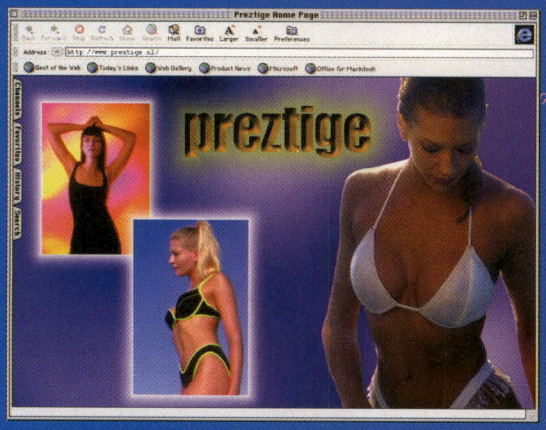

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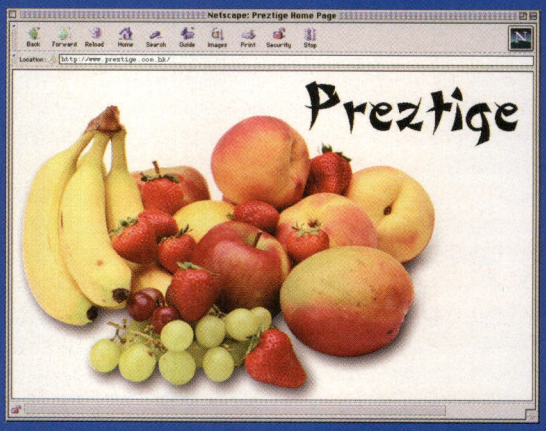

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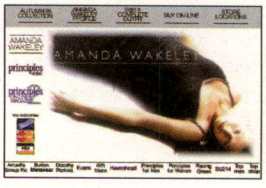
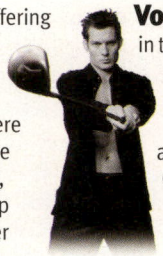
The Net and pizza delivery have always been close friends. So this'll come as a real treat for late night computer geeks who might never have to leave their terminals to eat again. It's only the lucky inhabitants of Milton Keynes who benefit from this online pizza service for now, but London will follow in early 1999. While you're waiting for your pizza to arrive, you can play a Flash version of Asteroids.
www.dominos.co.uk

The Football League has finally made it onto the Web. But at this stage in the season, its site is later than the final whistle in a Man Utd match. Still, by teaming up with the Press Association, it's made sure the information on the League, Worthington Cup and Auto Windscreens Shield is reliable and fast. The PA is also responsible for hosting and maintenance.
www.football-league.co.uk

After scoring a hat trick of wins at The British Fashion Council's Glamour Award, self-taught British designer Amanda Wakeley has joined Burton's huge online presence.
www.principles.co.uk/amandawakeley



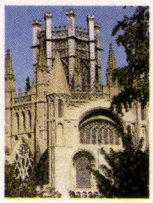
Another stylish offering is Fade clothing, which has teed off with its golfing range. There are some nice little touches at its site, including a pop-up currency converter from e-commerce partner Netbanx. Members get a 10 per cent discount on clubs and golfing paraphernalia.
www.fade-fashion.com



Vote for the sites of '98 in the Webby Awards. Since the *San Francisco Chronicle* (**www.sfgate.com/chronicle**) ran an article calling them the Oscars of the Internet, more than 100,000 people have logged on to cast their votes. Watch out for a live Webcast of this year's event.
www.webbyawards.com

Douwe Egberts launched its new consumer site at the end of last year, sticking with Flash gurus Tableau (**www.tableau.co.uk**). Learn about making the perfect cup, the history of coffee and coffee facts and figures.
www.douwe-egberts.co.uk

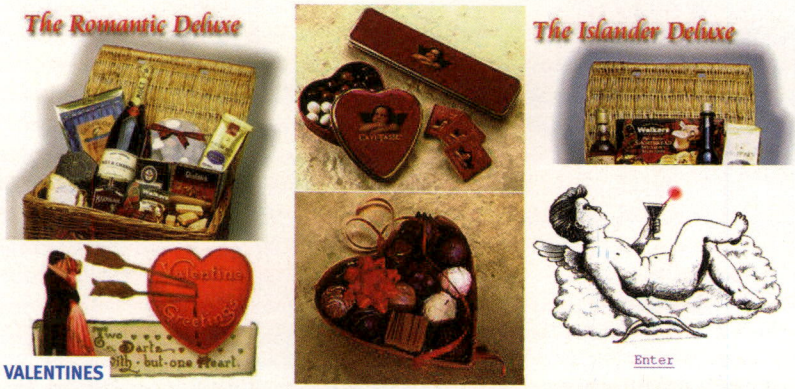
Closer to home, the eclectic architectural style of Ely Cathedral is now on the Web. The site is blessed with pictures from the camera-toting Reverend Jan McFarlane and a simple design. Modern style and concise content generate a community feel. Thanks go to designers, Kan (**www.kan.co.uk**) and Ely On-Line (**www.ely.org.uk**).
www.cathedral.ely.anglican.org



After the gluttony of the Christmas period, online oral hygiene is in vogue. Mouthcare News has info on dental subjects, a filling-free forum and general mouthcare hints, but can't check your breath. Personal questions can be answered, but cost £25.
www.mouthcare.com

Next, grit your teeth and visit the Dental Anxiety & Phobia Association (DAPA) site. Research by the Adult Dental Health Survey shows a suspected 60 per cent of Britons feel nervous about dental treatment, over half feel anxious going to the dentist and nearly a quarter would rather suffer toothache.
www.healthyteeth.com

Bored with your screensaver? Then visit the Japanese language site for MOPy, the free, virtual pet



VALENTINES

Remember, it's the thought that counts

Despite the proliferation of online greeting cards, there'll be some love lost if that's your only Valentine's offering. But if the selection in Clinton's is down to cute 'n' cuddly and times are hard, your hand may be forced. Imperial Cancer has its very own Cupid at (**www.icnet.uk/cupid**). And while you're online, it's a short hop to Chocolate Store (**www.Chocolatestore.com**), a new site for luxury chocolates. It's the time of the year when the GNP of Belgium soars. Or if you're feeling really romantic, check out the tartan romantic deluxe hamper from 800 Hampers at **www.800hampers.com**.

eyor

phone calls are expensive. So save time and this month's essential sites

But you know what happens...

The US population has gone *Star Wars* crazy, but while you're waiting for the UK release, here's a chance to pretend you've seen it. But be prepared for the colossal 10Mb+ download of the trailer. At 2K/bps, you'll be waiting to feel the force for over an hour.

You could choose instead to watch the trailers at the cinema – American showbiz magazine *Variety* discovered that two thirds of a 500-strong LA film audience walked out immediately after seeing the trailer, and before the main feature started.

www.starwars.com/episode-i/news/trailer

fish. More than five million people in Europe own a MOPy pet fish, with 200,000 new owners every month. You're given points to exchange for tank accessories – rocks, weeds, a thermometer and even aphrodisiac fish food.

www.virtualcreatures.com/jp

To mark its first Web birthday, the RSPCA has launched its own cyberpet. Like an online Tamagotchi, you feed it, groom it and try to keep it alive.

www.rspca.org.uk

It's a busy time of the year for animal charities, and The Blue Cross has revamped its site ready for the influx of unwanted pets. Articles include 'New dog in the family' and 'Looking after your kitten'. There's even a feel-good story about a kitten called Molly who was rescued from a Grimsby flyover by unemployed Malcolm.

www.bluecross.org.uk.

Another charity, The National Autistic Society, has relaunched its site with information on autism, parliamentary updates and an online enquiry service.

www.oneworld.org/autism_uk

New Year's resolutions to do better at school should be assisted by the launch of an international environment programme for schools. It's backed by David Attenborough and is the brainchild of US Vice President Al Gore. Information on weather, the atmosphere and climate will be pooled from schools around the world and made freely available. GLOBE will add a link to your school's homepage if you register.

www.globe.org.uk

Award-winning Associated New Media is adding personal finance to its ThisisLondon site (**www.thisislondon.co.uk**). ThisisMoney launches at the end of January, and joins an increasingly attractive commercial market.

www.thisismoney.co.uk

National Savings also gets a new look. The site has reached its target of 64,000 users since its launch in August. But the biggest lure is still the Premium Bonds area and its millions of unclaimed pounds. Over £200,000 worth of Premium Bonds have now been bought online.

www.nationalsavings.co.uk

Why do they *do* that?

It seems the Web is adept at finding matches between science and science fiction. Hours spent with a test tube, bunsen burner and the ubiquitous iron filings have produced The Comic Book Periodic Table. If you're doing your Chemistry GCSE this could prove a useful memory aid. Search on any element and the site gives you chapter and verse on the relevant comic book superhero. Genius!

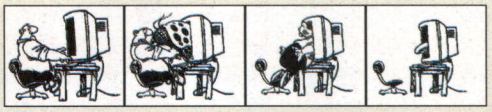
www.uky.edu/~holler/periodic/periodic.html

Which brings us nicely to The Women of Marvel Comics. The site has sadly been left unattended for a year but it's still a top resource. If you need an alter ego, there are plenty of heroines here – Princess Python, Firebird or The Enchantress. Where do you think the Gladiators get their names from?

www.geocities.com/Hollywood/2855

We're counting down until the Millennium Bug throws the online world into a state of chaos. If you're still in the dark, this site takes a rather literal view of the problem.

http://thesitefights.com/wepatrol/mil_bug.gif



It's the end of the world as I know it. And I feel fine. Well, maybe not. This site claims it is the end of the Internet – if you're in the US. It's the final directory entry of the easternmost Web server. Completely pointless.

http://opaldata.com/the_end/index.html

If your school hasn't yet got a site, check out the winners at ArgoNet's National Best School's Web Site Competition for inspiration.

www.argonet.co.uk

Also new is education e-zine looking at educational issues and aimed at both teachers and parents.

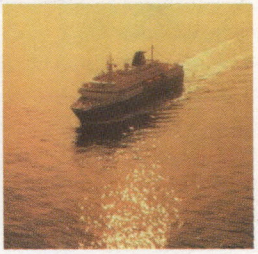
www.teaching-today.com

Try saying the word awning without yawning. Yet they're covered with gusto and fervour at Caravan Sitefinder. The site's a bit shabby to look at, but when you step inside, there's a comprehensive list of UK sites, dealers, the best cars for towing, and help for disabled caravaners. It's a great resource if you like holidays on the pull.

www.caravan-sitefinder.co.uk

For the more discerning holidaymaker, Swan Hellenic has beefed up its site. Each cruise now comes with a map and description. Its search facility and deck plans will find what you need.

www.swan-hellenic.co.uk



And travel veteran Emap Online has teamed up with Screentrade (**www.screentrade.co.uk**) to offer online travel insurance services on the Bargainholidays.com and 1Ski.com sites.

www.bargainholidays.com
www.1ski.com

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IRISH Domain (.ie)		£ 95
ISLE OF MAN Domain (.co.im)		£ 85
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ITALIAN Domain (.it)		£ 65
SWISS Domain (.ch)		£ 115

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Price excludes Naming Authority Fees

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Price excludes Naming Authority Fees

Web Hosting Plus — £ 130

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Price excludes Naming Authority Fees

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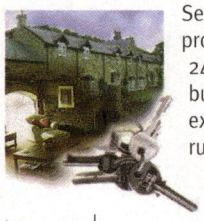
SPOTLIGHT ON...

Find a home from home

Anything that means you don't have to deal direct with estate agents or waste time looking at derelict houses must be a good thing. Leslie Bunder assesses the online estate agents

Buying a house is one of the most stressful things you'll ever do, apparently. So the prospect of viewing and even buying property from your desktop sounds most appealing. It means you can search for your dream home using such criteria as location, price and number of bedrooms. And if you're relocating to a different part of the country, you can search online without the inconvenience of travelling to the area itself. There's still a long way to go before the estate agent becomes an endangered species, but if you're in the market to move house, these sites could be a good place to start.



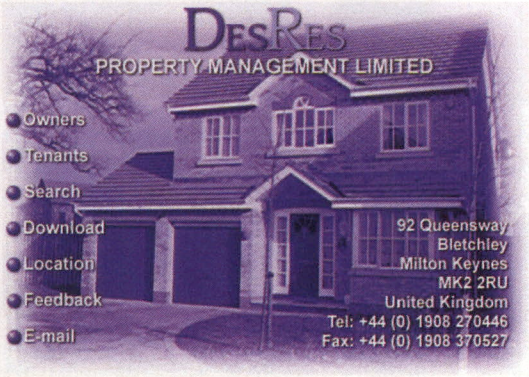
The National Association for Estate Agents is the first place to start if you're looking for properties or seeking advice. The NAEA is the UK's leading professional body for estate agents. All its members are bound by rules of conduct to protect the public's interest and this site is the closest thing in the UK to a property portal.
www.property live.co.uk

Find a Property is a comprehensive site listing more than 2,000 properties from its participating estate agents. A comprehensive search facility displays an annotated table of your chosen area, listing the number of properties for sale, rentals and a link to your relevant agent. Don't expect frills, but the site is easy to use and a good springboard for more relevant sites.
www. findaproperty.com

Playing house

General Accident Property Services only has property details for 24 of its branches, but it's looking to expand. You can run a search in two or more areas at the same time, which is a novelty, but limited – unless you're looking to move to East Anglia but are considering, for example, Scotland as a second choice.
www. gaproperty.co.uk

DesRes Property of Milton Keynes has an excellent home page. You can download reports on successful letting and tenancy agreements or a personal property reservation form. They've all been converted into PDF format so you'll need the plug-in reader from Adobe Acrobat (**www.adobe.com**).
www. desres.co.uk



Hot properties

Property Argus concentrates on property in Gwent and is one of the most innovative sites dealing with property on the Net. By using a live picture zoom plug-in, you're taken on a 3D tour of the property of the week, starting from the outside and moving through the kitchen, sitting room and bedroom(s). You can zoom in and out, or focus on one aspect. You'd certainly know if you were interested in this property before making an appointment to view. The site also boasts many other comprehensive features, including a map of the Gwent area, relevant contacts and a section devoted to local services and amenities.
www.propertyargus.co.uk

Century 21 is well known in the US. You could almost guess, with the garish gold-coloured lettering and crass design. Any temptation I might have had to use my 'mouse to find that house' rapidly disappeared. Unfortunately, you can't specify an area, so you have to plough through irrelevant lists before finding something you want.
www. century21uk.com

The Home Counties are covered by Connells. Select the desired area from a simple image map. Your searches are registered for 90 days, and if anything comes onto the market in that time, you'll be notified by email.
www.connells.co.uk

Bonnett's offers a good selection of property in the Brighton area. You can use the email link to request more information.
www.bonnetts -property.co.uk

Compact and bijou

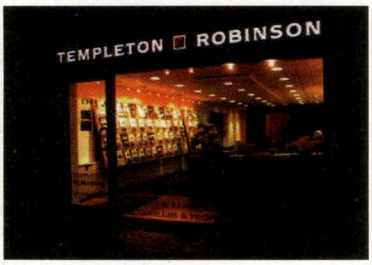
Property City is devoted to property in London. Simply select your criteria and the results are returned in seconds. This is a database of selected estate agents' properties, but some of the information can be confusing. A search between the postcodes W1 and W5 found just 11 properties – and some of these were miles away from the postcodes that had been requested. But the structure of this site is far more stable and it could be one to watch.
www. propertycity.co.uk

Wetherell's says it deals with upmarket properties in the Mayfair area. Is there any other kind? The site is updated regularly and offers brief property outlines. Email a request for further details or a viewing. You need to register your details before getting anything from this site.
www. wetherell.co.uk

Hamptons is a large firm offering property in some of

the most popular and expensive areas in the country. I looked for a property costing less than £100,000 in North London and found nothing. When you do find something, the site gives you some brief details. A click to get more information presents the same text, but a larger image of the property.
www. hamptons.co.uk

Euracom focuses on short-term service apartments, and details of prices and availability are updated by the minute. A simple design makes navigation easy.
www.euracom. co.uk



Colin Bibra proved frustratingly slow to load, due to rather large images. But the photographs give you a good idea of how a property looks from the outside. Information on the site is poor, and lacks details on room sizes, amenities, location or length of lease.
www. colinbibra.com

Templeton Robinson is a Northern Ireland-based estate agent. It has comprehensive information on all its properties and most of them have accompanying photographs. This is better than the awful text list of its properties, which is poorly designed.

This site contained a couple of glaring errors, including the bargain of a lifetime – a house listed for the price of £115.
www.templetonrobinson. co.uk

Welsh Estate Agents appear to be streets ahead in terms of design and content. Evans Bros covers west and mid-Wales and hasn't been bashful about what to put online and what to leave offline. Everything has gone up on the site and most properties have relevant photographs.
www.evanbros.co.uk

Upcoming area

Knight Frank offers a standard search service, but with such a small selection of properties available, be prepared for a lot of unsuccessful requests. If you do find a property which interests you, there are no pictures of it.

The site also seems to be the home of Knight Frank International, so there are links to offices in Botswana and Zimbabwe. To get to UK properties means another couple of mouse clicks. The site covers residential and agricultural property across the UK and links to relevant property reports.
www. knightfrank.co.uk

In contrast, FPD Savills is disappointing. I tried a search on anything in London under £100,000, but found only two properties, which was discouraging. But it's not nearly as depressing as the search on the north of England, which didn't turn up any properties at all. Perhaps everyone is happy where they are? If you succeed in tracking something down, there aren't any photographs – there's plenty of company information, but Joe Public won't find it very useful.
www.fpdsavills.co.uk

Strutt and Parker's site is even worse – it's confusing to navigate and full of errors. A search on Mayfair in London unhelpfully threw up properties in Herts and Oxfordshire.
www.struttandparker.co.uk

Newman offers standard, but unimaginative, search criteria. But the site is well presented and dispenses warnings and advice on the perils and pitfalls of the property market.
www. newman-property.co.uk

Carltons of Dundee looks good, but the properties for sale part of the site has been under construction for more than a month.
www.carltons-dundee .co.uk

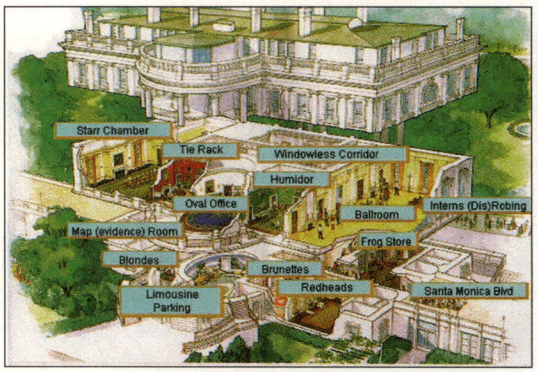
Going, going, gone...

Property Find **(www.propertyfind.co.uk)** has a commercial and residential property online auction where bids are submitted on the Net. It claims to have sold £5 million worth of property on the Web in the past year, with 50,000 prospective buyers and sellers already registered. You can peruse the properties on offer by registering online and you can enter a bid if you see your ideal home – auctions take place on a monthly basis. If you decide not to buy, or if you're just a little confused by the system, you can watch the demonstration, where The White House is up for sale.

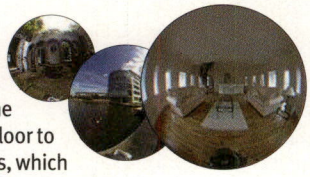
Berkeley Homes

If you're a Berkeley Homes devotee **(www.berkeleygroup.com)**, this site will find the latest development in your area. It's easy to navigate and very comprehensive – a search on London returned ten new developments scattered across the capital. But fails to include pictures of its homes and, in many cases, omits the price.

Woolwich Property Seekers **(www.wps-property-seeker.co.uk)** lets you search property for sale throughout the country by clicking on the region of your choice. Properties are listed in price order, and each of them has a nice clear picture, a brief synopsis and a point of contact to arrange a viewing. There are extra touches, such as room sizes and the contact name at the relevant agency.



Within these walls



By fully embracing the Internet, Winkworth **(www.winkworth.co.uk)** provides a comprehensive site with real benefits. The showpiece is the tour that uses the IPIX plug-in. This technology gives you a full view, from floor to ceiling and wall to wall. There are no converging verticals, which you often get with 360° viewers and you can zoom in and out for a closer inspection. The technology is limited to the more expensive houses. But there's plenty of useful content on the site, including a renting price guide and a nifty mortgage calculator. There are a couple of minor niggles. The agency provides an enlarged map of the area taken from UK MultiMap, and some of the cheaper properties are not pictured.

Where to go from here...

The highlights are Property Argus, Woolwich and Winkworth, although many of these sites will be mutually beneficial. They'll be a useful resource when you're looking for a new home and they'll make the estate agents more accessible and wealthy. Unfortunately, though some of the sites have been professionally designed, they're now in states of disrepair or periods of neglect. Many are struggling under the weight of colossal image sizes, while others need to incorporate pictures. It's not too late for them to catch up, but the best sites will dominate the market if they don't act soon.

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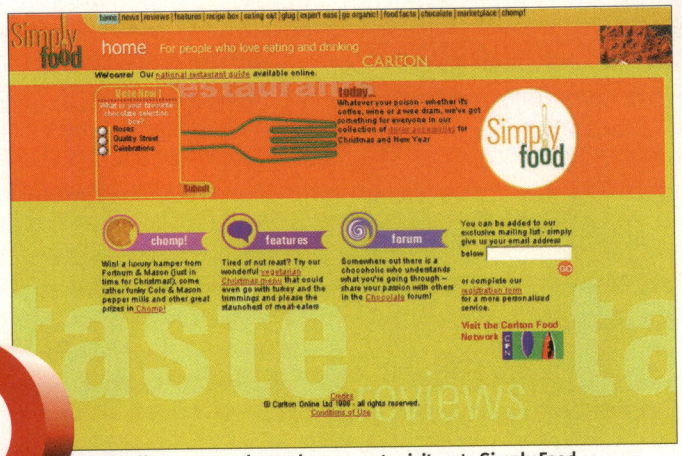
SITE OF THE MONTH

Big on the small screen

Carlton Online was conceived in only six months. It's now setting the standards for Web publishing, with good content and well-designed sites. Mike Hales looks at how the online strategy was developed and tests the three products – Jamba, Popcorn and SimplyFood

Last October, no one even knew Carlton had an online strategy. By November it had become synonymous with Web publishing. Within one frenetic month, the new company launched a hat-trick of sites and established itself as a force to be reckoned with. Remarkably, Carlton's directors only gave Online the green light in March.

Headed by managing director Carol Dukes, formerly of Emap Online (**www.emaponline.com**), Carlton Online is aiming for a mass-market audience. Sam Michel, executive producer at Popcorn, has pledged to aim "at the mainstream cinema-goer, rather than film anoraks". Nevertheless, Popcorn hopes to maintain the strengths of Carlton, with its interests in the book, TV and cinema advertising industry. Most notably, it has a major stake in ONdigital (**www.ondigital.co.uk**), the fledgling digital and interactive TV service.



A Mediterranean colour scheme greets visitors to Simply Food

According to Dukes, the sites will have Carlton branding, but they must be seen as standalone new media properties, and stand or fall on their own merits. She is already looking beyond the PC as a means of access, and has expressed an interest in interactive content services for kiosks, portals, digital TV and traditional Internet services, including Freeserve (**www.freeserve.co.uk**). SimplyFood has joined Jamba and Popcorn as a channel on Freeserve, and the deal is an advantage to both. The

Site Of The Month

Carlton trilogy

Designers
Carlton Online

Development time
The three products were launched from scratch and took six months to complete

Development costs
About £2 million

URLs
Jamba
www.jamba.co.uk
Popcorn
www.popcorn.co.uk
SimplyFood
www.simplyfood.co.uk

Developing a Web strategy for Carlton Online's hat-trick of sites

Mike Hales got the lowdown on the sites from managing director of Carlton Online, Carol Dukes

So who exactly is Carlton Online and what makes it so special?
Carol Dukes: "Carlton Online is a new, separate company within the Carlton group. Its aim is to develop new digital media businesses within consumer markets. We try to use the strengths of the rest of the group where we can, but what we absolutely don't do is provide online support for other parts of the group. Nor do we create Web sites around programmes.

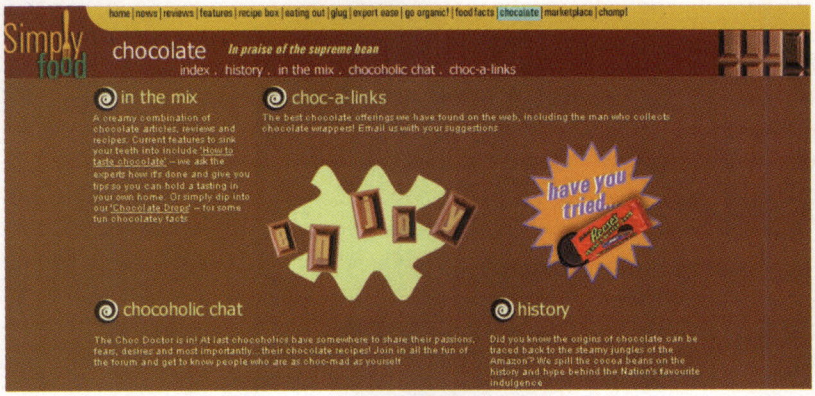
Our colleagues in the television companies all operate their own sites, and we stay in touch with them closely. But we're a separate business. I think Carlton's approach is far more subtle than the usual approach. We're not saying we've got a magazine, newspaper and television channel – let's put up an online version of it. We developed the online version of *Catchphrase* because it fitted within the Jamba environment, not the other way round. And we had to license the format and content.

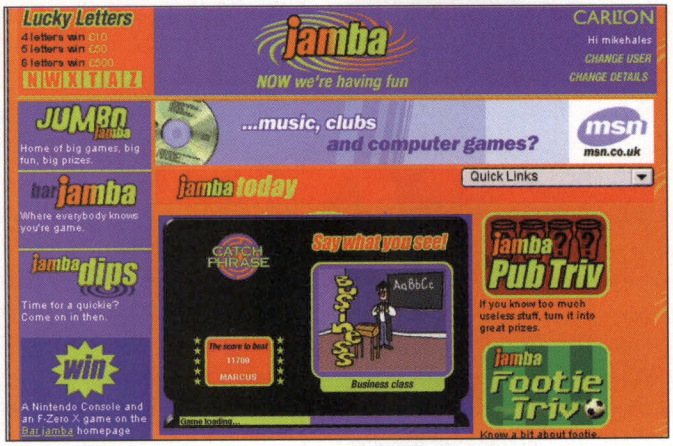
So is there a role for digital and interactive TV in the future of Carlton Online?
Carol Dukes: "We believe the Web is a viable medium in its own right in the long term. But in mainstream consumer markets, I believe the Web sites with access to the TV screen are going to have a greater advantage over those that don't. We're all intrigued about the possibilities of interactive TV, but none of us feel we have the answers yet."

Does that mean you expect ONdigital to become the premier channel for your properties, or do you believe the Web will continue to grow?
Carol Dukes: "We'll be distributing our digital media properties across any digital platform that makes sense – including other digital TV platforms. I do think the Web will continue to grow, not least because over the next five years there'll be more and more types of appliance we'll use to access it. When people don't have to use a PC, which is a truly appalling piece of equipment in terms of usability and reliability, I think the market will grow in a way we haven't seen since Freeserve!"

Was the fact that the sites are driven by Cold Fusion technology and are template-based the key to the quick rollout? Or are you just good at planning?
Carol Dukes: "Yes, Cold Fusion (v4) is the middleware solution. However, the sites are all in various ways based on Oracle v8 databases running on a Sun Solaris platform. PSINet host the servers at Telehouse. We considered several of the "content management" solutions such as Vignette's story server, but concluded that they were too cumbersome to implement within our timeframe. The entire company has been recruited, established and has launched three new products from scratch in about six months. Using a database-driven structure means that large parts of the sites are created dynamically anyway.

In terms of planning, this only really started when the producers and our technical director were all on board back in July. Prior to that it was just me waving my arms about and drawing a lot of pictures on the backs of envelopes."





Top left: the chocolate section. Left: fast and furious, Jamba delivers on this visual promise! Familiarity doesn't breed contempt as Catchphrase behaves exactly as you'd expect. Above: the power of Popcorn lies in its film and cinema search engine. The search engine is the core of the site, though games and features such as 'Babe (and Hunk) of the Week' are sure to draw the punters

revenue comes from advertising. Douwe Egberts (**www.douwe-egberts.co.uk**) and Top Jobs on the Net (**http://topjobs.co.uk**) already advertise on the sites. Additional revenue will come from the demographic information (from users) for list sales and content feeds to other services.

The chronology

The first product online was Jamba. It's a games site to counter the shoot 'em ups and MUD (multi-user dungeon) games available from the likes of BT Wireplay (**www.wireplay.co.uk**). US-based Uproar (**www.uproar.com**) started the idea two years ago, with games on the Uproar site or plugged into other sites. The game collects money from users who sign up with Uproar. This works best with simple formats taken from board and card games. Jamba has traditional favourites like Solitaire and reworked versions of Carlton Television's *Catchphrase*.

Written in Java, online Catchphrase uses the familiar TV graphics. This presents a problem – systems such as WebTV won't support Java in the future, which could make Jamba obsolete. Despite this, the site has been well thought out and the design is colourful and lively. The games are easy to play and addictive.

Popcorn

Popcorn went online a fortnight after Jamba. It's a Web site based around films and offers news, reviews and gossip. There are two search fields – one for the film or star you want to see, and the other for your town or postcode. The search results include the nearest cinema, starting times and a contact number for the cinema – online booking is promised soon. Carlton is building its listings and will feed these into other services, including (no doubt) the imminent Carlton cinema channel on digital TV. The site also offers a small amount of editorial content which draws you back for snippets of movie gossip and news.

SimplyFood

The third of Carlton Online's products is SimplyFood. This frames-based delight is elegant in design and easy to navigate. Chefs including Raymond Blanc and Jean-Christophe Novelli bring their expertise to the site.

The recipe database will provide inspiration for the office worker on the way home to cook dinner, although I couldn't find my particular favourite – baked Alaska. The news doesn't shy away from the big issues of the day, so expect meaty features about beef on the bone.

The search engine lets you choose a food type and location or the name of a restaurant. The database is currently incomplete, but it does offer a healthy number of options outside the capital (many sites think restaurants only exist in London). Two nice touches are the organic food section, that lists organic retailers around the UK, and the chocolate focus. The latter boasts a host of sticky links, a chocoholics chat forum and instructions on how to hold your own chocolate tasting.

Content is fed from Carlton Online and from third parties including Associated Press (**www.ap.org**) and games makers such as NT Media. It isn't afraid of using technology. Java, Macromedia Flash and Shockwave all feature and Jamba, in particular, is littered with multimedia plug-ins.

Carlton Online has shown that good ideas can be used effectively on the Web. The content on Jamba and Popcorn is fairly thin at the moment, but like SimplyFood, it acts as a taster for the services and fun underneath. im

What other designers think

Erin O'Neill, director of EONCORP

"There's excellent design work in Jamba. It's bright, exciting and feels busy. Popcorn is clean, quick to download and has good navigation aids. I liked the contemporary design of SimplyFood, especially the use of colour. But it seems to be designed for a large monitor resolution, and there are some unnecessary and anonymous graphical elements."

Deborah Loth is a designer at Silverberg 4i Design (www.silverbergcom.com/media)

"Popcorn is very neat, very coherent and very consistent. The colours are used well to aid navigation. Search results are printable (hooray!), unlike most of the rest of the site (boo!). Cinema information is well presented and there's a good level of information. Occasional glitches like the blanked-out booking number for the Peckham Premier didn't impress. The font size may be a bit tiny at high resolutions, although it's fine at 640x480 pixels. The access can be slow as the pages are generated from a database. I thought Popcorn was the best of the three from a design point of view.

"In Jamba, the games are too good. They're so absorbing you don't notice the ads. Curiously, the Java dominoes game is exactly the same as one I commissioned two years ago for the Malibu site – it even has the same bugs.

"SimplyFood feels incoherent and there's too much screen wasted at the top. The top frame doesn't fit my 640x480 browser-window, and there's no way to scroll across it. The Interface for Features section is chopped awkwardly in half because there's no room for content between the top and bottom frames. I didn't like the typography and the site structure is too deep – it takes at least three clicks to get to anything of substance."

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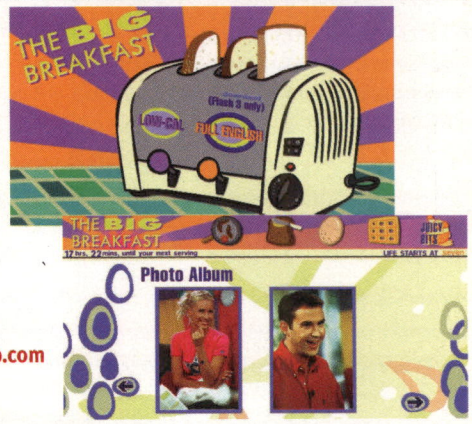
BEHIND THE SCENES...

February's top sites

Experts tell us how this month's top sites were built. Get the lowdown on the products webmasters use, the inside track on site budgets and tips on how to use the latest technologies

The Big Breakfast

Breakfast TV is for life, not just for mornings. But is there enough fun here to last the full 24 hours?



Every morning, alongside Johnny Vaughn, Denise Van Outen and the crew, David Evans dons his superhero cloak to reveal The Big Breakfast Web site address. Despite his cheap threads, the site promotion sets a fine example for TV webmasters.

The site itself lets you enter competitions or put yourself forward for Family of the Week. You can even head over to the Channel 4 chat room for appearances from Big Breakfast regulars and the occasional special guest.

It lets viewers interact with the show, but Channel 4 head of interactive media, Sophie Walpole, also developed the site to publish material generated by the programme.

"It's a 24-hour Big Breakfast," says Walpole. "There's lots going on all day." Its design is as fun and garish as the show. Starting at the homepage, you can choose the basic hypertext or the all-singing, all toaster-popping Flash version, developed in six weeks by Bomb. Producer Abby Bowen used Flash to generate animated toast and wacky sounds. "We had to make the site as fun as possible," she says. "It's not about the house or what people know from watching the program, so we had to add features."

Bomb used Shockwave to devise Food Fight, a simple point-and-click game where you throw food at members of the crew who poke their heads through windows and cupboard doors. Otherwise, the bare site offers little extra material, unless you want to know that Denise was best mates with Mel from All Saints at stage school .

Chris Mugan

http://bigbreakfast.channel4.com
Design ★★★★☆
Content ★★★☆☆

ON THE OTHER SIDE
ComedyZone www.comedyzone.beeb.com
ITV www.itv.co.uk
Teletext www1.teletext.co.uk

HOW DO THEY DO THAT?

Channel 4 uses a specially designed application to run its chat room. Programming firm Codehammer came up with software that controls chat with out visitors noticing. "If someone's rude or naughty we just click on them," says Sophie Walpole. "The software is intuitive for us and the user. We liked the idea of Internet Relay Chat (IRC), but applications like i-chat don't have the speed of our software." The software is written in C with Java for the client, so the application runs across several platforms and you don't need to download plug-ins.

Prince of Wales

It's not every day your future king gets himself online...

Want to know more about HRH Prince Charles? Well here's your chance. On his site you can get anything from a biography to recent photographs of him in action – playing pool, signing a cask of whisky or even listening to jungle music.

Despite an abdication row fresh in the air, there was no reference in the news and events section. Instead there was a snappy little piece on Prince Charles visiting a retired policeman.

But if you want to complain about it, take a trip to the best feature on this site – the visitors forum, where you can offer your views on issues chosen by the Prince. It's a predictable range, from agriculture and architecture to monarchy and religion.

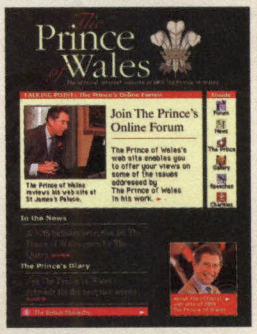
Sadly, Charles won't be appearing live online, and no individual correspondence will be entered into. Still, you can get all his speeches and articles from the site.

It was a bit disappointing that the things you'd expect on Charles' homepage were missing – no links to environmental sites or Goons tribute pages.

While this site is never going to win any innovation awards, it's easy to find your way around. This simple approach makes for a dependable but enjoyable visit. And who knows, you might just influence the Prince's thinking.

Richard Dinnick

HOW DO THEY DO THAT?



The PA took on quite a responsibility with this site. "It took a staggering 1.75 million hits in the first 24 hours," explains Gail Bratchpiece of PA New Media, "so its capacity to handle traffic was a primary concern." The PA hosts the site on its own high performance UNIX server, capable of handing tens of millions of hits a day. "Access to the site is extremely limited and firewall security protects the site from vandalism," Bratchpiece adds, "a precaution used on all PA Web sites."

www.princeofwales.gov.uk
Design ★★★★☆
Content ★★★☆☆

RIGHT ROYAL SITES
The Official Royal site www.royal.gov.uk
Diana Memorial Fund
www.natwest.com/worldpay
The Prince's Trust www.princes-trust.org.uk

From the Terraces

You might not get your cuppa and meat pie, but this site's packed with original content straight from the fans

There's a massive gulf between the bland official football Web sites and sites run by footy enthusiasts. Now a site appears for fans to publish their views and even the odd exclusive.

Owned by Arena Online, From the Terraces chooses to ignore standard football club press releases. Most newspapers print the same stories on the back page on a Monday morning, but FTT's content comes straight from fans.

FTT took six months to develop, at a cost of £200,000. Arena hired design consultant Matt Ashworth to do the job on the strength of his work for the Nationwide League site. Ashworth came up with graphics to reflect the alternative nature of the site. With plenty of cartoon-style decoration and a bog roll navigation bar, it's fun and easy to navigate. "I'm not a football fan myself," he concedes. "I had to ask people what they wanted to see. It was refreshing to design something for users rather than being corporate-driven."

And amateur writers do come up with scoops. A Spurs stringer lambasted his club for not buying all the available tickets for a game against Chelsea at Stamford Bridge. He believed Tottenham were protecting revenue from ticket sales to watch away matches on a big screen at White Hart Lane. The story was picked up by both BBC's *Watchdog* (**www.bbc.co.uk /watchdog**) and fanzine *When Saturday Comes* (**www.dircon.co.uk/wsc**).

You can use FTT's email news service to stay in touch – a great idea, as meaty stories are thin on the ground. FTT has 28 club writers, plus fans from a dozen clubs who add

views every week. If you fancy a go, they're still looking for contributions.

Chris Mugan

www.fromtheterraces.com
Design ★★★☆☆
Content ★★★☆☆

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Football 365
www.football365.co.uk
Matchfacts www.matchfacts.com
Football Supporters Association
www.fsa.org.uk

HOW DO THEY DO THAT?

Internet designers often use Cold Fusion to generate Web pages direct from databases. Arena Online also uses it to allow journalists around the country to input their copy. Writers access a central SQL database through their browsers. Cold Fusion presents a selection of forms for news and match reports, so all the writers do is cut and paste text. "Rather than having one webmaster, we have dozens," says Arena's online director Ian Hogg. "The journalists have control and different people can publish straight on to the site."

Westlaw

It looks like a corporate Web site, but it's really the future of Web development

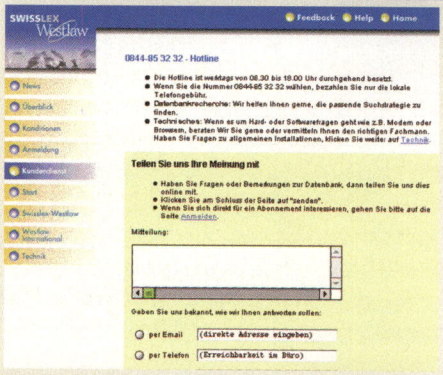
Westlaw operates sites in the US and the UK, but it's the European site that's grabbing the attention, by opting for eXtensible Mark-up Language (XML) over flat HTML. Westlaw is hailing XML as the future of Web site development, but it's an expensive vision. The site, produced by ThomsonConsulting, took the best part of a year to create it, with an investment of over £500,000.

But in ThomsonConsulting, Westlaw has found a strong supporter of XML. If the Westlaw Europe site proves popular, ThomsonConsulting could be developing versions for a UK site. There are advantages of using XML, as Peter Anning, senior consultant at ThomsonConsulting explains: "The Web development was reasonably trouble free, apart from some minor problems with threading issues and active server pages."

XML is a project of the World Wide Web Consortium (W3C), and the development of the specification has been supervised by its own XML Working Group. XML is not a proprietary development of any company – it's a public format and the v1.0 specification was accepted by the World Wide Web Consortium a year ago. Its advantages to the designer are twofold. It allows more flexibility than HTML and it's easier to use and understand than the complex SGML. You can certainly expect this site to be the first of many to start using the XML standard.

Leslie Bunder is a technology writer for Teletext

HOW DO THEY DO THAT?



A team of six developers works on the site, and they regularly update and maintain it. "Visual Studio was used to create the Active Server Pages (ASP), with custom COM components written in C++. The Web Server is Internet Information Server 4.0 on Windows NT 4.0. The documents are held in an XML index and a customised program then loads them into a database," says Peter Anning.

www.westlaw.ch
Design ★★★☆☆
Content ★★★☆☆

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Non-stop sounds with Hyperceive

If you've ever thought about adding sounds to your Web site but didn't know where to start, or if you've tried streaming video from Real Player and got bored to death with straight WAV files, check out Hyperceive. It's a new audio authoring tool that lets you add continuous sound, music and voice to your Web site. The best feature is a walk through guide which holds your hand through the whole exercise, making things like adjusting the timing easy. It's already attracted the likes of HMV (**www.hmv.co.uk**) and Eidos Interactive. A copy costs just over £150 and you can buy it via credit card securely online.

www.hyperceive.com

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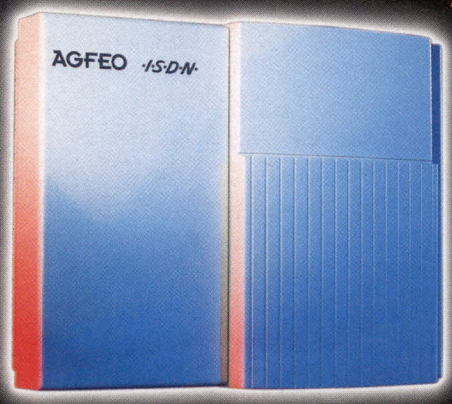

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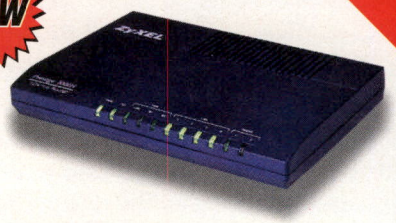

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HE DONS HIS HARD HAT, SHUNS HIS FRIED BREAKFAST AND GOES BEHIND THE SCENES TO BRING US THE GOSSIP FROM THE WEB DESIGN INDUSTRY

Political Tamagotchi

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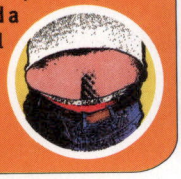
www.stand.org.uk

What's on the wireless?

As the one-man equivalent of Wimpey Builders, I'm always jetting off down the M4 for high-powered consultations on garage extensions and loft insulation. So imagine my surprise when I spotted a Web cam eyeing me up on the hard shoulder in Reading. Tele2 UK is responsible. The word on the street says it's the UK's first wireless Web cam – not much competition, surely.
www.tele2.co.uk/demo

The Builder pulls up his trousers, then picks up the pieces industry cowboys leave behind. Overheard a rumour, and dying to tell someone? Email in strictest confidence to thebuilder@internet.emap.com

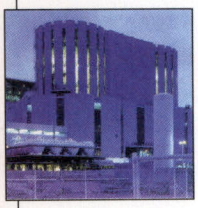


British Energy

The new site for the general public is keen to look reliable and has nothing to hide

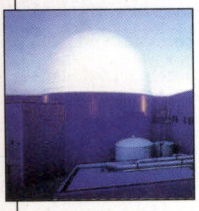
The welcoming smile of the Sellafield visitors centre is now directed at students and the general public, on what was a corporate site with information for investors and the media.

"We want to show British Energy is keen to add transparency to its communications and operations," says corporate affairs manager Anne Campbell (whatever that means).

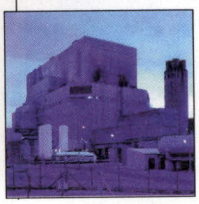


Designers Bluewave worked on the site update, introducing a bright, colourful design to connect its sections. There's added content, and an extra navigation bar makes information easy to find. "We aimed to modernise the site to live up to the expectations of sites for 1999," says Bluewave account director Alex Barnett.

There's a lot of data to take in here, but it's clear and well presented. A fact file on nuclear power goes from descriptions of atoms to an explanation of the UK's worst nuclear disaster, the Windscale fire. Text and graphic tours of nuclear reactors take you through them stage by stage.



Some of the £30,000 budget was spent on the virtual reality tour of the Sizewell B reactor. It's little more than a grainy animated walk between buildings. But this use of Shockwave technology doesn't hide British Energy's lack of ambition. It wants to project an image of reliability while ignoring its critics. But like so many corporate sites, it misses its chance for interaction. Even Shell Oil's site has a chat room where you can level criticism at the multinational.



Chris Mugan

HOW DO THEY DO THAT?

3D specialists RMR developed the virtual reality tour of Sizewell B. Technical director Mark Smith says it looks fine with a decent bandwidth, which lets MPEG video files download at up to 20 frames per second. "The animation is future-proof. In two or three years' time, people on the Internet will see it properly," he says.

On Microsoft Softimage, Smith drew and animated wire frames of the buildings and then overlaid photographs. With a digital camera, he took 350 shots including the gravel to get the texture right. The tours include a silent install of Shockwave.

www.british-energy.com
Design ★★★☆☆
Content ★★★★☆

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Mailing lists with Mailing Labels

This site aims to cut the time and cost for a small business trying to get hold of mailing lists. It's fully automated and offers business-to-business lists from reliable sources.

Ordering from Mailing Labels is simple enough. Prospective users select a list and set their criteria. There are 19 data sources available, although two were mysteriously under construction on my visit. The site returns the list promptly and you can then buy it.

The list is provided as an ASCII file or as labels, using an ActiveX control wizard. The labels wizard requires Internet Explorer 3.02 or later. Purchases are through Netbanx secure credit card transaction or on account, and you can order whatever size of list takes your fancy.
www.mailing-labels.com

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IMFEB

There are some things you'd really rather keep to yourself

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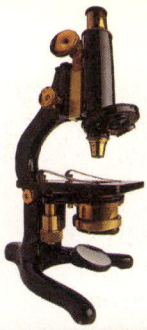


tried &te

Hot Downloads

We've trawled sites around the world to Plus the top 10 downloads to bring the

Top 10 multimedia freebies

Wav Central
www.wavcentral.com

A host of WAV downloads from TV, films and adverts. Plus some rather odd sound effects.

All WAVs
www.allwavs.com

Alternatively, try this WAV site which has an amazing collection of sound files, ranging from Bill Clinton to Bugs Bunny.

MP3
www.mp3.com

To start (or continue) a collection of music files on your computer, look no further than MP3. Download free music and find out how to transfer tunes from your CDs.

Clipart Online
www.clipart.onlinenews.net

Not just clip art, but 3D images, backgrounds, animations and music – the works.

Internet TV
www.internetv.com

All the film trailers, music videos and comedy clips you could wish for. You can even get live, pay-per-view performances.

MPEG Archive
www.mpeg1.de/intro.html

A database of thousands of animations in MPEG format. There's a search engine on the site, so you can home in on exactly what you want.

A+ Art
www.aplusart.com

Sixteen categories of icons and over 600 animations make this site well worth a visit.

Image Search
websearch.miningco.com/msub10.htm

There are millions of graphics, paintings, photographs and other images on the Web. Check out this specialist image search engine to help you track down exactly the picture you're looking for.

Digital Art and Communication
www.digartz.com

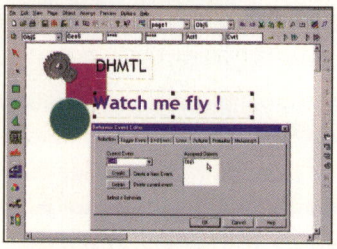
Can't play a multimedia file? RealAudio and Video, Midi, VDO, QuickTime, VivoActive and Shockwave – they're all here.

Digital Artist
www.dartist.com/html/downloads/freesoftware.htm

Not content with downloading multimedia? Create your own with these resources – from image animators to multi-format video converters.

IMS Studio

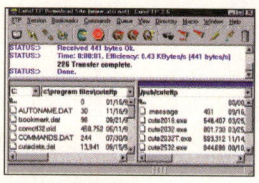
This DHTML creation program is useful if you hand code your Web pages. IMS Studio lets you create animated, event-driven, cross-browser Web pages, and then writes all the DHTML and JavaScript for you. You insert your images, sounds, text or shapes, and then define the animation



IMS Studio could make your Web pages come to life

parameters for those objects. IMS is a powerful program with an excellent tutorial. If you can live with the somewhat dated-looking user interface, it could make your Web pages come to life.

Price *$49.95 (around £30)*
Platforms *Win9x*
Download size *2.7Mb*
www.virtualmechanics.com



A cute FTP program for transferring files

Cute FTP

Cute FTP is a reliable FTP program for transferring files, and a user-friendly way of talking to a Unix box. This new version has lots of new features. You can select multiple files from various remote directories and tag them for transfer. If you lose your connection, Cute FTP will resume downloading or uploading incomplete files. You can also compare local and remote directory contents. Cute FTP highlights files which are different from each other – useful for Web developers. You can even print a directory list. Cute.

Price *$34.95 (around £25)*
Platform *Win9x*
Download size *1.1Mb*
www.cuteftp.com

Screen Ruler

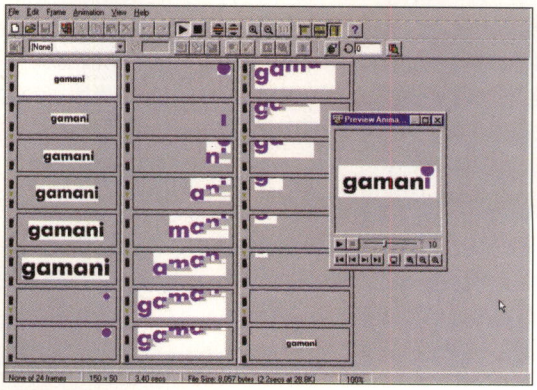
Ever got the ruler out of your desk and strapped it to the screen? Screen Ruler is an accurate virtual ruler which you can drag around the screen to measure things. It stays 'on top' until you close it, and can be used either vertically or horizontally. It measures in pixels, inches, picas or centimetres. A useful tool for Web page designers.

Price *$15 (around £10)*
Platform *Win9x/WinNT/Mac*
Download Size *26k*
www.kagi.com/microfox

Live Image

LiveImage is a great program for creating and editing image maps, with specific areas performing different actions. LiveImage writes all the code for you, including the HTML target tag and the browser status bar text. It checks URLs for broken links and adds extra HTML tags to areas for Java, ActiveX, or server-processed commands.

Price *$29.95 (around £20)*
Platform *Win9x/WinNT*
Download Size *2.3Mb*
www.liveimage.com



GIF Movie Gear

Looking for the *de facto* GIF animation program? GIF Movie Gear looks like a good choice. Its user interface is based on a film strip metaphor, showing all your frames at once. The trick with creating animated GIFs is to keep the file size down. GIF Movie Gear helps you do this with palette reduction and inter-frame optimization functions which shrink animation files down to Web-friendly sizes. It also supports Photoshop PSD, JPEG, AVI, BMP, and GIF files. It exports to AVI and generates your HTML code for putting the animated GIF onto your Web page.

Price *$30 (around £20)*
Platforms *Win9x*
Download size *645k*
www.gamani.com

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HTML Font and Body Tag Wizard

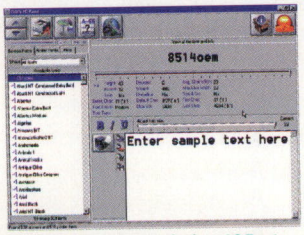
This is a useful tool for hand coders. It creates accurate font and body HTML tags, and takes the guesswork out of designing base colours for your Web pages. You can play with all the settings, and the program's preview area shows you how the resulting font and body text would look in your browser. You can then cut and paste the tags into your Web pages.

Price *Free*
Platform *Win9x/WinNT*
Download Size *262K*
www.cob.asu.edu /jeff/html/fbw.html

IC Font

Ever wanted the ultimate font previewing utility? Sick of using a magnifying glass to see the tiny symbols in Character Map? IC Font could be the answer. This program lists all the installed fonts on your computer, including detailed information on your screen and printer fonts. You can sort, filter, preview and print fonts, or view the ASCII table for them. It also has a very slick pseudo System 8 user interface.

Price *Free*
Platform *Win9x/WinNT*
Download Size *1.2Mb*
www.iridis.com/dsabljic

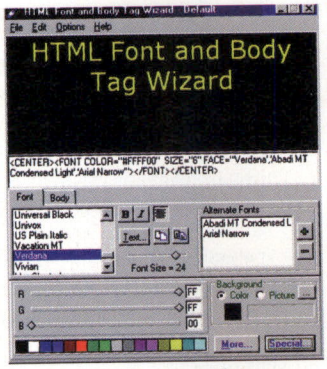


The complete font solution: IC Font previews all of the fonts on your PC

WebTV Viewer

This interesting program previews your Web pages as they would appear on a WebTV system, using either the original Classic or the newer Plus system (coming soon to a living room near you). You'll be surprised at how your Web pages will look. With digital and WebTV gaining in popularity, can you afford not to test your pages for problems?

Price *Free*
Platform *Win9x/WinNT/Mac*
Download Size *4.4Mb*
http://developer.webtv.net/docs/viewer/main.htm

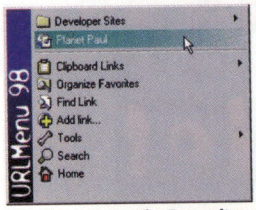


A look into the future – preview your pages on a WebTV system

URLMenu

URLMenu sits in your system tray and provides a quick, one-stop access to all your bookmarks. If you've got different sets of bookmarks in different browsers, URLMenu gives you a common repository for them. A useful program which saves you importing and exporting bookmarks between browsers.

Price *Free*
Platform *Win9x*
Download Size *125K*
www.elphin.com/products



URLMenu stores the Favourites from your different browsers

BrowserSizer

A Web developer's life is tough – different platforms, browser versions, screen resolutions and colours, not to mention cross-browser incompatibilities. BrowserSizer might be able to help you. It lets you preview your Web pages in different screen resolutions (640x480, 800x600, 1024x768 and WebTV), giving you a better idea of how your pages will look.

Price *Free*
Platform *Win9x/WinNT*
Download Size *894k*
www.vasile.com /racecar/stampware

TimerOn

TimerOn is designed to manage scheduled activities on your computer. TimerOn lets you set up almost any activity, including checking email, performing backups, or defragmenting the hard drive. You can schedule and monitor up to 50 tasks (including DOS batch files), and then execute them repeatedly at specified daily, weekly and monthly time intervals. Just what you need to organise your desktop.

Price *$10 (around £7)*
Platform *Win3.x/Win9x*
Download Size *401k*
www.crama.com

BrowserSizer lets you view your pages in different browsers

Greg Sloman

In Tried & Tested

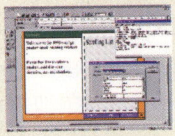
Internet Magazine **is committed to bringing you the best and most authoritative reviews in the Internet industry. Every month we test and rate the most important new Internet products. If you're making a buying decision or doing a bit of pre-purchase research, the following pages are not to be missed.**

In Tried & Tested you'll find the latest news on newly-announced products, hard-hitting reviews of key product releases and comprehensive Labs tests.

On our Web site at www.internet-magazine.com/reviews/ you'll find a database of all our reviews from the last year.

Key reviews for February

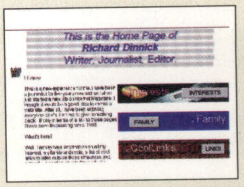
Sending and receiving email while you're on the move is a dream for Internet users, but is it really practical? And what do you lose going from the desktop to a pocket-sized device? We look at the state of the art in mobile Internet access with the new breed of Personal Digital Assistants (PDAs).
See page 80



Flash Generator is a new system that automatically updates the images and Flash movies in your Web page from the server.
See page 89

The WinZip archiving program has a reputation to uphold. This upgrade has a user-configurable toolbar, support for new compression formats and improved help. It's still the best.
See page 92

The latest version of WS_FTP Pro has a slew of new features, including scripting and a new way of integrating FTP file transfers into the Windows Explorer.
See page 92



Web! is a Web page editing program aimed specifically at beginners and newcomers to the Net. But does it sacrifice power for simplicity?
See page 95

Star Ratings

★★★★★	Must buy
★★★★☆	Should buy
★★★☆☆	Could buy
★★☆☆☆	Poor buy
★☆☆☆☆	Don't buy

Inspecting gadgets

Personal Net Assistants

They promise the Internet in your back pocket, email in the palm of your hand – truly portable Web access. They're gadgets to win the heart of every aspiring James Bond. Our man on a mission Paul Smith went to the labs to put six PDAs to the test

Do you dream of surfing on the bus or grabbing your mail from a beach in Turkey? Of having Net access without having to plod home to your PC or locate the nearest cybercafé? Well, stop dreaming. There are now gadgets that'll let you do the lot. The breakthrough has come from a combination of a maturing PDA (personal digital assistant) market,more sophisticated technology and falling prices. They've only been around for about a year, but we think it's time to put them to the test.

As yet, there's no such thing as a mobile device dedicated to the Net. Nothing on the market was designed as an Internet product first, with other functions as added extras. In this labs test, you'll find a range of products with various features to let you perform Internet tasks, but some of them don't even come Net-ready from the box.

If you're looking to buy a PDA, you should look at its core function and whether that suits the way you work. Since none of them were designed as dedicated Net devices, the rest of what they offer could make all the difference.

A brief history...

PDAs – life-transforming, pocket-sized wonders – have struggled to develop a meaningful existence. Apple's over-ambitious, and now abandoned PDA project, the Newton, made the whole concept look dodgy. And Microsoft hasn't had much more luck.

So it fell to a small, start-up designer to make sense of it all. Jeff Hawkins and Donna Dubinsky, who conceived the original Pilot handheld computer, realised that keeping it simple would make

Using devices with a mobile phone

We're now in a position to roam the Internet with only two small devices – a phone and a PDA. Originally, you needed a modem, usually a PC-Card, and a cable to connect your phone. Each phone had its own cable, so upgrading your phone meant you had to upgrade the whole modem kit.

Then 32-bit operating systems used soft modems which only required a cable. This was one of the great promises at the launch of the Psion Series 5, although over a year later, this software still hasn't arrived.

Today you don't even need a cable. Many phones sport an infrared port. And some recent phones, such as the Nokia 8810 and the Ericsson SH888 even have a built-in modem, so you don't need software.

What this means is you can take any of these devices (except the Sharp), place the SH888 near it and you can be surf and email from wherever you like.

With the Palm, you'll need an extra driver, but you don't need anything with the Psion – just set up a modem, aim it through the infrared port and you're connected.

(Incidentally, Nokia 8810s do not currently work with Palm IIIs, so check the firmware has been suitably upgraded before buying this phone for use with a Palm).

Although undeniably cool, this presents its own problems. Infrared is a line-of-sight technology and it can be awkward balancing a phone on one knee while aiming a PDA at it while sitting on a bumpy bus. I know.

The Psions, Palms and infrared phones demand various switches to be made each time you use them, either because the PDA needs to switch back to the serial port for synchronising, or because the phones turn off battery-draining infrared ports if not used.

Until integrated devices are developed, you can look forward to Bluetooth, a technology which promises to make interconnections simpler by using proximity

Personal Net Assistants compared

Device	Manufacturer	Price	Built in Net programs	Free programs	Commercial programs
Palm III	3Com	£279.99	None (contains TCP/IP stack)	Shareware browsers and email	Various, incl Hand suite
H/PC	Various	£699	Pocket Outlook, Pocket Internet Explorer	None	None
P/PC	Various	£299.99	Inbox, Mobile Channels viewer	None	None
Libretto	Toshiba	£1,521.63	Microsoft Outlook	Any Windows 95 program	As per desktop PC
Series 5	Psion	£399.95	Mobile Suite, contains email, browser	Various shareware	None
MC-G1	Sharp	Around £250	Email	n/a	n/a

The shape of things to come? Check out Digital Concepts' designs for the PDAs of the future at http://palmtopplanet.interspeed.net/digitalconcepts

people use it. With investment from 3Com, the Pilot – and with it a viable PDA market – was born.

Pilot found itself under attack by everyone from Microsoft, with its Windows CE and formidable marketing assault, through to Pilot, the pen maker, which sued Palm for trademark infringement. Despite this, the latest Pilot incarnation, the Palm, has helped 3Com corner two thirds of the PDA market.

The Palm's combination of size, ease of use and synchronisation with other databases was effective and new. But it was only a matter of time before the others caught up. The Psion Series 3x, and now the Series 5, offer strong competition in the UK, if not elsewhere. Meanwhile, Microsoft is busily encouraging major consumer electronics companies to adopt Windows CE for portable devices.

Get connected

PDAs now let you perform Net tasks, although some, including the Sharp, only do email. Others, like the Palm III, require extra software. And only the Libretto, will recreate a PC desktop experience. All these devices have fewer functions for Web than version 4 browsers.

To get on the Net with these devices, you'll need extra software and hardware, such as a modem to connect you. Some, including the Palm and the Psion, can use a proprietary fixed-line modem, while others take PC-Card modems. New models that include IrDA ports can now make wireless connections to mobile phones.

How you choose to connect doesn't just depend on the device, but on your needs too. Using a mobile phone, either via cable or via IrDA, adds the advantage of mobility, but might cost you more than a fixed-line connection. You might also need a new phone (expensive if you want to keep your current number) or a cable and software. And the best speed you can hope for is 9.6Kbps.

Fixed-line connections are a wonderful this when you're near a phone socket, but don't do much for your mobility. You can get modems to use with your fixed line which are as fast as their desktop equivalents, so if speed is the key, this is the way to go.

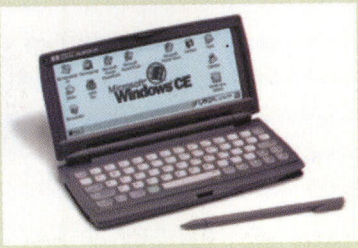
But speed rarely is the key. Rather than surfing, your use of a mobile Internet device is likely to be far more transactional and dominated by email (which is why we've included the Internet-challenged Sharp phone).

But the Holy Grail of integrated devices remains elusive – the all-in-one portable mobile-cum-Internet device. But this would present some conflicting interests and design issues. If your main use is making calls, you won't want a clunky Net phone. On the other hand, if you want to browse, you won't get a usable screen on a Nokia 8810.

Still, it's early days. With Orange promising mobile videophones by the end of the year, and companies such as Qualcomm integrating the Palm OS into phones already, anything could happen. It'll be fun to watch.

Designing for mobile browsing

The problem of speed is multiplied tenfold (well, 5.8-fold) if you move from a 56K modem to 9.6K GSM. Combine the generally limited HTML capabilities and viewing areas of PDA browsers with the special needs of PDA users, and you've got a very particular type of page to develop if you want to target this increasingly vital user-base.



PDA users want different content than version 4 browser users, such as more data-led, transactional and text-only pages.

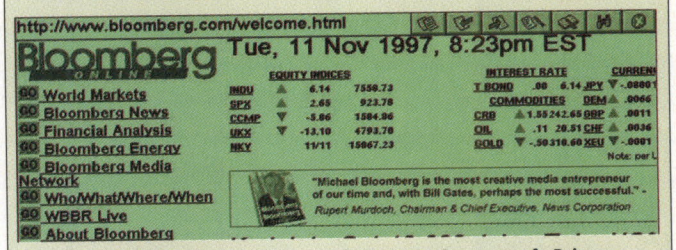
In design, primary consideration should be given to speed of download and ease of access to the material. Graphics should be kept to aminimum in number, size and functionality.

Graphics should look good in both four-shade grayscale and colour, not because some PDAs are in colour, but because some desktop browsers will turn up at your page.

The first thing the GSM browser is likely to do is turn off its image download altogether. And ALT tags might not appear in its place. For this reason, it's best to avoid graphics which can't be read in text, such as fancy buttons.

Also, avoid everything but the most basic HTML. Tables, for example, don't show up well in the Palm's HandWeb, because it doesn't scroll horizontally. So the BBC's text-only news page is difficult to use because it downloads tons of links before getting to the headlines.

Finally, if you do create a text-only or PDA version of a page, try and get the link right at the top of the page so PDA users don't have to wait for the whole page to download before finding it.



What you're working with – this is how a site looks on the screen of a Psion 5

The winner is...

We're still waiting for the perfect mobile Net device. But if you want good email on the road, occasional Web facilities, and the advantages of a great PDA, get the Palm III. It's not perfect and those who want to write a lot should consider the Psion. But it fits in your pocket. And get an Ericsson SH888 to go with it – it fits the Palm like a glove.

Built-in modem	External modem type	External modem cost	Email standards	Browser type	Fax send	Fax receive	Star rating
✗	Clip-on, via cable to desktop modem, infrared	£99	SMTP, POP3	Graphical	✓	✗	★★★★★
✗	PC-Card, CompactFlash, infrared, serial port	£50+	SMTP, POP3	Graphical	✓	✓	★★★
✗	CompactFlash, infrared	n/a	SMTP, POP3	Graphical	✗	✗	★★
✗	PC-Card, serial, infrared	£50+	All	Graphical	✓	✓	★★★
✗	CompactFlash, proprietary, PC-Card via adapter	£99.95	SMTP, POP3	Graphical	✓	✓	★★★★
✓	n/a	n/a	SMTP, POP3	N/a	✗	✗	★

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3COM

Palm III

The market leading PDA – a simple, easy and effective all-rounder

The Palm is still the leading PDA, despite challenges from all quarters. The Palm 4 is due for release this year, but no firm details were available as we went to press. Mark Bercow, who heads up 3Com's Palm division in the US, did let a few details slip at dinner recently. You can forget about an integrated phone, but the Palm 4 will finally have rechargeable batteries. Bercow implied there might be a colour version available.

The Palm's infrared port makes wireless browsing a reality

BEST BUY

The Palm III is the market leader because it sticks to its original aims of being simple to use but highly functional. With the addition of an infrared port introduced in the latest model (but available as part of an upgrade to previous models), wireless browsing becomes a reality. This is all thanks to the introduction of a solid TCP/IP stack in the Palm III OS.

The best suite is probably Smartcode Software's HandMail, HandWeb and HandFax (**www.smartcodesoft.com**). The fax software is send only and is tied to the Memo application. You create your fax in Memo and send it from HandFax.

Synchronising your Palm can include your desktop email Inbox, and any emails you reply to. But HandMail, in itself a useful and fully functional email client, doesn't mirror the email contents. It'd be more useful if you could open HandMail, find all your Inbox contents and choose which you needed to reply to on the road.

That aside, it does everything you'd expect, including multiple accounts, filtering and scripting. It doesn't accept attachments, but it does list them.

HandWeb is the Palm's browsers tool. It's a full browser which takes advantage of all the Palm III's capabilities, including the four-shade grayscale display. You can turn images on or (for GSM) off, and then individually download important ones. It supports tables (just) and forms, but you won't find frames, Java or scripting support.

There's no right mouse button, just a pen, so clicking brings up a context-sensitive menu from which you can view an image or follow its link.

HandWeb can cache items (although it's limited to 999Kb – not much for those who upgrade to 8Mb), accept cookies and save Favourites.

And, because of the core stack, you can switch between Net applications without redialling.

For size, functionality and range of applications, the Palm III is the best surfing device if you don't need to write a lot and if you don't want a huge bulge in their pocket.

★★★★★

Palm III
Price *£279.99*
Pros *Small, easy and effective. The best all-rounder*
Cons *Requires extra software. No good for writing documents.*
Contact *(0800) 262 958*
www.palm.com

VARIOUS

H/PC

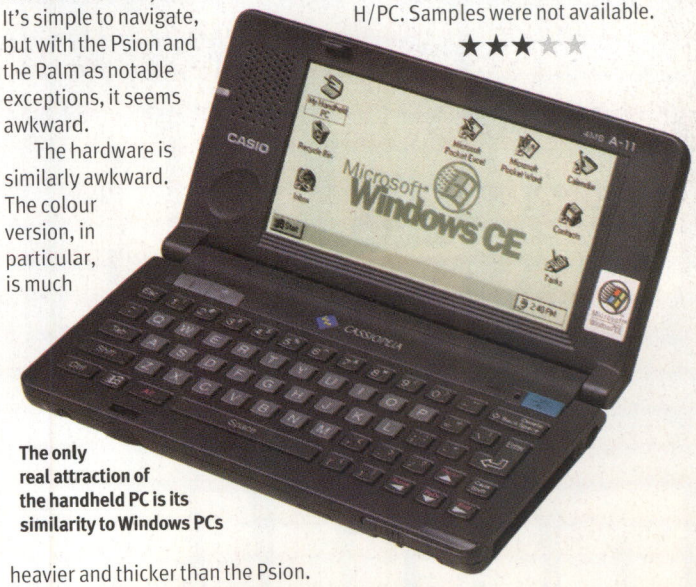
A handheld PC which uses Windows CE to mirror your desktop applications

Microsoft's introduction of Windows CE meant brave manufacturers could enter the fraught market of the handheld PC (H/PC) with confidence. Not only was Microsoft giving its stabilising influence to the market, it came up with a standard for both the hardware and software.

As a result, Windows CE machines all tend to look the same and offer similar features. The hardware spec is usually restrictive, and all the machines run the same operating system – Windows CE, now in version 2, with added colour displays.

The strength of these devices is in creating your desktop Windows environment, making it simple to pick up and use. Whether the GUI-heavy interface of a mouse-driven 1024x768 monitor is appropriate for a handheld, pen-controlled, 320x240 display is an important question. Windows 9x is an interface-laden system. It's simple to navigate, but with the Psion and the Palm as notable exceptions, it seems awkward.

The hardware is similarly awkward. The colour version, in particular, is much heavier and thicker than the Psion. The clamshell pivots at the back edge, so you have to hold it with one hand every time you tap on the screen to stop it from tilting over. The Psion connects to your PC via a simple cable, but H/PCs require a desk-hogging docking station, although they do have rechargeable batteries.



The only real attraction of the handheld PC is its similarity to Windows PCs

The applications on an H/PC are cut-down versions of Microsoft Office, including Microsoft Outlook. This means you can synch with Outlook and send or receive emails direct from the device.

To do this, or any other Internet task, you set up a connection device in the same way as with Windows 95. One of the good things about Windows CE is the PC card slot. Slip in a card, and it's immediately recognised – no INFs, no setup. The downside is that PC card modems drain battery life remarkably quickly.

The default H/PC browser is the version of IE built into Windows CE version 2 – no frames, no Java, no animated GIFs. Still, it's fine for most Web tasks. It makes for great viewing in colour, especially with the automatic sizing, but it's still a hard device to recommend. It's heavy, expensive, clunky to use and bulky. But it's similar to Windows, which may be an important feature to some. There's now a new version of Windows CE – the Handheld PC Professional edition. This is planned for something between an H/PC and a laptop, with a full-sized keyboard and a larger footprint than the H/PC. Samples were not available.

★★★☆☆

H/PC
Price *Around £699*
Pros *Colour screen, decent browser*
Cons *Large, expensive and clumsy to use*
Contact *Philips Nino: (0800) 961 445*
www.nino.philips.com

BT

To: arthur@talk21.com

From: hamish@talk21.com

Subject: UNITED

GOING DOWN

GOING DOWN

GOING DOWN

GO-ING

DOWN

VARIOUS

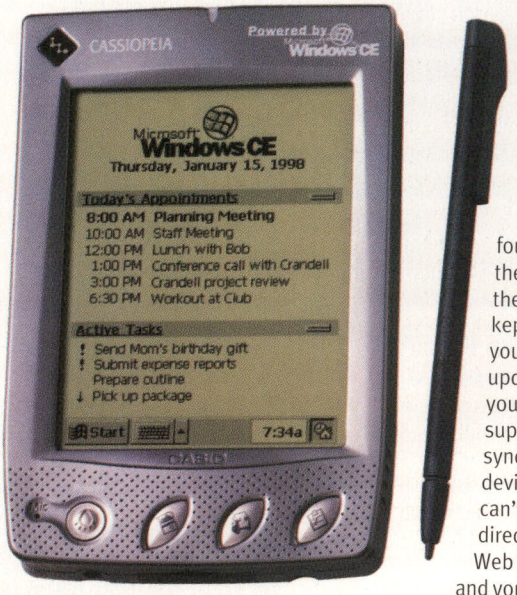
P/PC

It's improved, and it's small. But it's unlikely to be your Net solution

When it was first announced, the Palm PC (P/PC) caused some consternation at the headquarters of its similarly named competitor, the 3Com Palm. The latter's unchallenged domination of palm-tops (gadgets with no clamshell opening or keyboard) had a market penetration of 65 per cent. But with the introduction of Windows CE, the ageing Palm's time had come.

If the Windows interface seems overbearing on an H/PC, it's almost an affront on a palm-sized device. The 6x8cm screen of the P/PC is too small for the taskbars, cascading menus and dialog boxes.

The P/PC makes up for its lack of space by having a virtual keyboard.



The P/PC surpasses the current Palm, but it's severely limited as an Internet device

The P/PC keyboard appears at a touch of the pen. While an appealing concept, like much of the P/PC, it ends up adding to the number of strokes you need to complete a task.

In fact, much of the P/PC's interface makes you realise why the minimalism of the Palm OS works so well, in about a quarter of the memory space. But the hardware surpasses the current Palm. Its screen is sharp and supports 16 shades of grayscale. It also has a digital sound and recorder capability.

But as an Internet device, the P/PC is strangely limited. There's email which synchronises with both Outlook and your POP3 account, using either a CompactFlash modem or the infrared port.

Once you've set up a connection device, you click on the Service, Connect menu item from within Inbox and it'll connect.

The most bizarre aspect of the P/PC is its lack of an Internet browser. It has a TCP/IP stack in its operating system and full Net dial-up capability, but the only Net feature is what Microsoft calls Mobile Channels.

Channels, as any Internet Explorer user knows, are supposed to cache pages and view them offline. It's an unfathomable process which few people bother with. Mobile Channels are designed for use with P/PCs – they're different from, and completely incompatible with, normal channels.

Once you've found or created these channels, they should be kept up to date on your desktop. To update them on your P/PC, you're supposed to just synchronise the device. But you can't update them directly from the Web to your P/PC and you can't access the Web directly either. It's a bizarre situation, rendering the device unsuitable for anyone who wants to browse and roam.

★★☆☆☆

P/PC

Price *From £249.99*

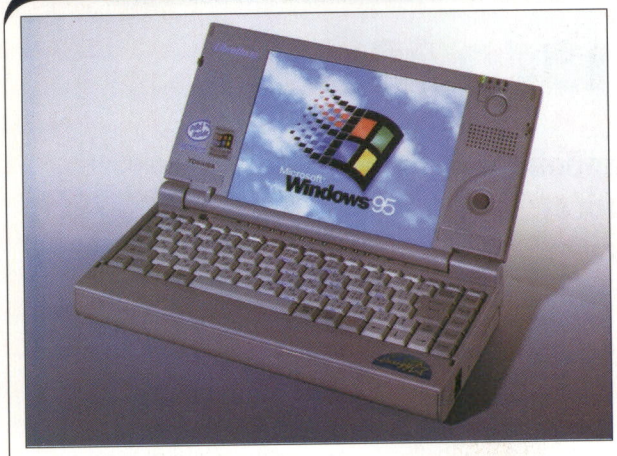
Pros *Small, good screen, good sound*

Cons *No browser support at all*

Contact *Casio E-11: (0181) 450 9131*

www.hpc.casio.com

TOSHIBA



Here's your old friend, Windows

Libretto

A Pentium PC with the same processing power as a laptop computer

The extraordinary feature of Toshiba's Libretto is that it's a Pentium PC, with as much RAM and hard disk space as most laptops. It's not much bigger than a handheld PC, weighs 950g and it'll still fit into your bag or combat trouser pocket. Inside is a keyboard, a 7" colour display, and all the processing power and applications you have on your desktop. The model we reviewed ran a 166MHz MMX Pentium with 32Mb of RAM.

In the PDA market, palmtops are about synchronisation – you can't run your applications, but you can take your data with you. Handhelds are about compromise – you can run some version of your applications, but you'll lose features and flexibility. The Libretto is neither – if it runs on your desktop, it'll run on the Libretto (unless it's a 3D-accelerated game).

The Libretto also features a couple of PC card and CardBus sockets, built-in sound, infrared and a small port replicator, giving you parallel, serial and VGA output.

Put this together and it means you can run anything – IE4, Java applications, Outlook 98, WinFAX, Lotus Notes...

Because of its infrared port, you can use an infrared mobile phone with or without built-in modem. You can use a mobile phone with data cable, or you can use a desktop or PC card modem. For a one-box solution, you could use a GSM phone card, such as the Ericsson GC-25. This is, essentially, a mobile phone on a type-III PC card. But you'll need a second SIM, and the software it comes with is poor and the support even worse, so I'd recommend the infrared phone solution.

The Libretto does have its problems. At over £1500, it's far more expensive than the others in this labs test. For browsing, it might simply be over specified. The keyboard doesn't come close to the Psion's in usability – the keys are smaller and touch-typists will find it difficult to use.

The mouse system is mounted screenside. To the right of the display is a small thumb-controlled joystick button. Around the back of the screen sit two buttons exactly where your first and second fingers lie. This suited me, but others find it fiddly.

This system points to another difference – the Libretto is the only device in this test without a touch-sensitive screen. Where Windows CE compromises between the familiarity and form factor, and the where the Palm takes a fully reductionist approach, the Libretto makes you use the whole Windows experience on its relatively small screen – without making any concessions to size.

★★★☆☆

Libretto
Price *From £1,169.13*
Pros *It can run anything your PC can*
Cons *Expensive, with a fiddly keyboard*
Contact *(01932) 828 828*
www.toshiba.com

BT

To: hamish@talk21.com

From: arthur@talk21.com

Subject: CITY

Who 'r' ya?
Who 'r' ya?
Who 'r' ya?

It's free email and it's British!
Register now at
www.talk21.com

talk21
free email from BT
Brings you closer

PSION

Psion 5

Popular handheld PDA with desktop software and a keyboard for typists

The Psion Series 5 is a miracle of technological engineering. It's recently gained Millennium Project status, alongside *Tomb Raider*, as a product which shows the best of British design and engineering. It's well deserved – people love this handheld PDA and shower it with Mac-like adulation. It's small enough to fit in your larger pockets and has a huge pool of software and databases.

The Psion 5 has the best keyboard by far

But its best feature is its keyboard. Open the clamshell and the keyboard slides out towards you (remember how Pez dispensers worked?). The keys are large and it's the best device for touch typists. It has a touch-sensitive screen, runs on the powerful and increasingly popular EPOC32 operating system, and is excellent as an Internet device.

This is because Psion's Internet software, Message Suite 1.52, is extremely good and free. It has fully featured email, including support for attachments, and a reasonably competent browser. Message Suite (as well as the latest version of the Psion's desktop software, PsiWin 2.1) is available as a free download from **www.psion.com**.

Installation is simple and slick. PsiWin, incidentally, synchronises with most of the main PIMs, including Outlook and Organizer. You'll find it fairly easy to set up your Internet and email services. It even comes with templates for the main ISPs, although it's fairly easy to create your own.

Setup involves too many different settings. You need to go to Internet, Modem, Dialling and Remote Link dialogs to set up the Psion for use with a mobile phone.

But it works well once set up. I tested it with the Nokia 8810, and although it wasn't particularly fast (being GSM), it worked pretty much first time.

Email is simple. You have Local and Remote folders, with sub-folders for Inbox, Outbox, Draft and Sent items. Buttons control basic tasks, such as getting and sending email. You use the same interface for faxes. Strangely, it doesn't link to your contacts list, so there's no way of getting email addresses from there.

The browser is attractive and well implemented, but it doesn't support much in the way of HTML. No Java, no frames, no animated GIFs. But, for the basics, it's a capable browser.

The Psion Series 5 is ideal if you want to be able to work on desktop documents while on the road, and if you need full, mobile Internet access. The Psion's ability to convert documents from Office, SmartSuite and PerfectOffice, together with its excellent keyboard, make it a great choice for working beyond the office. If you just want to take your PIM data with you, it's probably too complex and bulky. But everyone else will find this PDA the best balance of power, size and cost.

★★★★½

Psion Series 5
Price *£399.95*
Pros *Brilliant device, good browser, great keyboard*
Cons *A bit large for most pockets*
Contact *(0990) 143 050*
www.psion.com

SHARP

Sharp MC-G1

A disappointing attempt at integrating communications

The MC-G1 is the only integrated communications device in this round-up. Unfortunately, it makes a good case for abandoning the concept right here and now. Unlike the other personal Net devices in this labs test, the only Net function this provides is email. The phone itself, the functions it provides and its laughable synchronisation capability all seem to militate against each other.

The email function works, but the phone fails to perform as a usable tool

The concept behind the MC-G1 probably sounded great at the pitch meeting in Sharp's phone division – how about a phone with built-in PDA, email and a touch-sensitive screen which synchronises with your PC?

The result is disappointing. The phone isn't *too* big. It's smaller than the Nokia Communicator and not much larger than today's mobile phones. It has a lid over the cover which lets you see the screen beneath it, but you must unfold this lid around the base in order to use the phone. There's also a rather old-fashioned extendable whip aerial, and a pointing device slotted away in its side.

You then have access to a touch-screen number pad from which to dial, using either the pen, which is a bit of a faff, or your finger, which requires more force and accuracy than should be necessary.

You also have access to the phone book list, which is the default screen. So those without a phone list will find an extra step involved before dialling. If you do have one, it's easy to select a number to dial.

Adding names and numbers is a chore because it involves tapping out the name and number with the pen on a very small virtual keyboard. To do this for a large number of entries (anything over two feels like a large number) is infuriating.

That might lead the MC-G1 user in the direction of Sharp's PC docking station. This connects to your (Win 95 only) PC and lets you manage the phone's contact list or, alternatively, synchronise with your PIM – as long as it's Outlook.

But despite hours of trying and tons of technical support (they seemed unfamiliar with Windows 98), all my attempts at installation failed under both Windows 95 and 98. This is probably related to the need to install an infrared driver, even if your PC doesn't have an infrared port (and it's a driver that doesn't exist on the Windows 98 disk).

Still, the email function works, if minimally. It does have a neat facility for rotating the screen 90 degrees so you can read your email without scrolling, but nothing else stands out.

The MC-G1 is an effort at single device integration, but it doesn't really answer many needs. It's certainly restricted to only email, but the whole phone fails as a usable tool.

★★★★★

Sharp MC-G1
Price *Around £250 (docking station: £139.99)*
Pros *Integrated phone/PDA*
Cons *No Web capability and poor PC synchronisation*
Contact *(0800) 262 958*
www.sharp-eu.com

www.vi.net
0800 11 77 44

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UK, US and global domains registered in Minutes. VI registers in all Commercial and many Country specific domains

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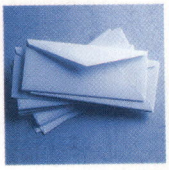

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London. SW6 4LZ

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9Net ONE Plan £19.95/mo.

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- CGI library (counters, mailto forms, etc.) • SSI PGP ASP MIME Support • Dedicated Real audio/video server • Detailed Web Usage Statistics • Access to raw log files

9Net PRO plan £49.95/mo. (Reseller Program)

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- Dedicated secure server (SSL) • Cybercash and VeriSign support • Full ODBC support
- MS SQL, MS Access, mSQL • Shopping Cart • 5000 MB of monthly data transfer, £.05 over
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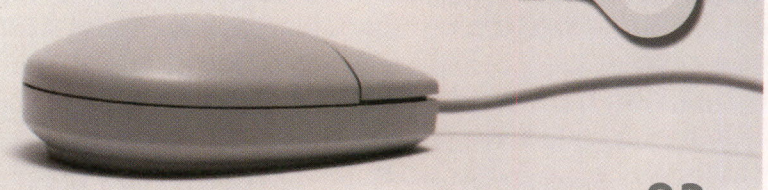
Different Space?



see page 93

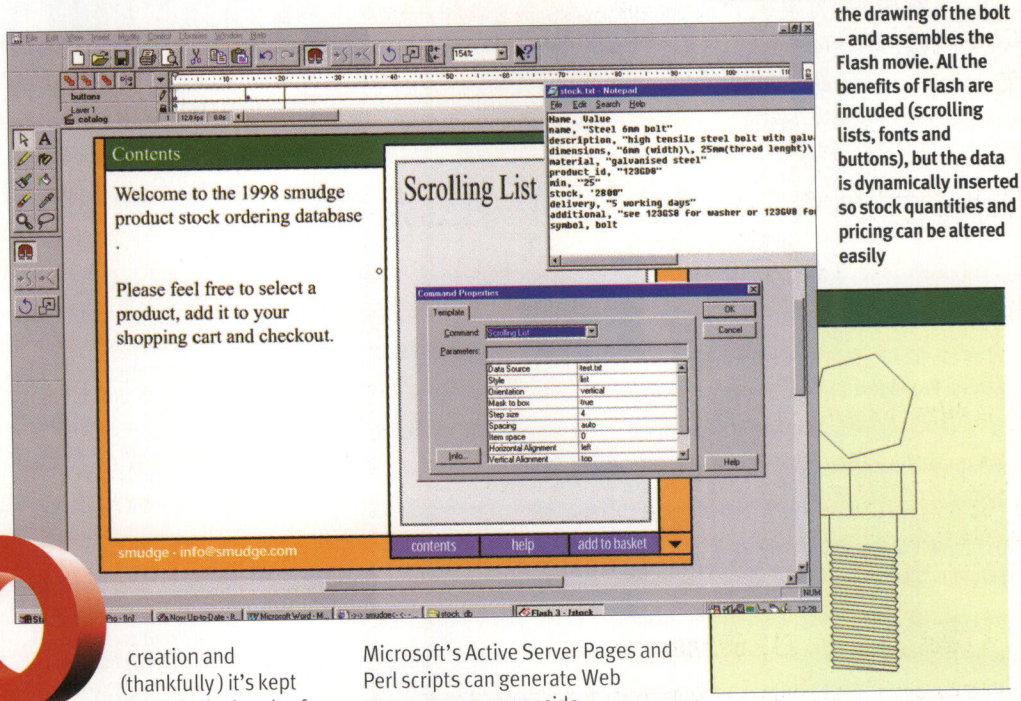
February's top products

This month's products are full of ways to improve your Web site: an FTP site manager, a file compression program, a homepage creator, an ISDN TA and ingenious Web server products

SERVER UPDATE SYSTEM

Macromedia Generator

Macromedia's new system updates Web page graphics and Flash movies from the server as they are requested



The template is constructed inside Flash. Each section is assigned a data source using the template window. Generator takes data from the text file – the drawing of the bolt – and assembles the Flash movie. All the benefits of Flash are included (scrolling lists, fonts and buttons), but the data is dynamically inserted so stock quantities and pricing can be altered easily

BEST BUY

Web design professionals spend most of their lives updating graphics on Web pages – it's tedious and a waste of design time. Macromedia Generator is the first product to update images and Flash movies from the server. It can do this when you access a Web page or at a pre-assigned time.

Creating and placing images in Web pages is nice, but Generator does far more than this. It collects data from a variety of sources: text files, symbols from a templates library, Flash movies and database query results. Generator inserts the combined data into a template file. This information is shown as a JPEG, GIF, PNG file or Flash movie – making it one of the most powerful and compelling solutions for the Internet.

Generator combines two products. The first is the dynamic graphics server. When you access a Web page which requires a graphic or Flash movie, Generator gets a request from the Web server (an Information server on NT, or Apache on Solaris). Generator then inserts the required data into a template file and sends it back to the Web server.

The template files are made with the second part of the product – the developer's studio, Flash edition. This is Flash 3, but with template creation tools that let you insert graphs, scrolling lists, tickers and images. To collect the image or data, you assign a data source in Flash. This is a simple solution for template creation and (thankfully) it's kept firmly in the hands of the design application and the design team. Incidentally, Flash's best features are still here, such as anti-aliased fonts and animation, if you output as a Flash movie.

Generator has two modes – online and offline. Online creates images dynamically, as described above. This is ideal for data that needs to be constantly updated, such as stock market figures. If the data changes less frequently, for example a weather map that updates every 15 minutes, the offline Generator comes into its own. Instead of taking a request from a Web server, it's taken straight from the command line of the server, or from a batch process script. Tell Generator to query the database every 15 minutes, then build a JPEG, GIF, PNG or Flash file, and save it into the appropriate directory on the Web server.

It's worth emphasising just how unique Generator is. Databases ranging from Oracle to Filemaker Pro have Web front ends. And Microsoft's Active Server Pages and Perl scripts can generate Web pages, as can server side applications such as Coldfusion. But only Generator can dynamically create graphics, so it's a perfect partner for the aforementioned products, not competition.

Combining graphics databases and scripts can lead to some very appealing solutions. There are more obvious markets for graphics, such as real time banner ads. But more interesting possibilities range from multi-language sites (which will only have to be designed once, as the database will change the language on the page) to personalised navigation systems and content. This type of content will be the focus for the Internet this year, as will e-commerce solutions, so Generator will be ideally placed in the market.

The price is excellent for a server side product, especially as you get a return on your investment from cutting back on your design department. We've found it hard to find negatives, but a wish list would include being able to incorporate forms into Flash, which would get data input from within Flash. We'd also like to see a centralised library manager for teams of designers, and a Linux version of the server product.

Generator is sure to act as a catalyst for the next generation in Web content and design. If your company produces Web solutions and you're not using Generator seriously, start worrying.

Tom Calthrop

★★★★★

Macromedia Generator

Price *Generator Developer Studio (Flash Edition) – £429*
Upgrade from Flash 3.0 – £149
Generator Dynamic Graphics Server – £1999 per processor
Support and upgrade package – £560 (server), £125 (studio) pa.
Pros *Excellent, flexible and fast*
Cons *Few negatives, Flash data input is a must for the next version. Linux version of server would be nice*
Contact *Macromedia UK*
Phone (01344) 458600
www.macromedia.com/Generator

ISDN TA

Omni TA 128

An ISDN terminal adaptor with a difference – you can connect two PCs at the same time

With the launch of BT's home highway and the falling cost of connection, ISDN has become a fast and affordable way to access the Internet. It's faster than using a 56k modem (up to 128k) and connection takes less than a second. The cost of ISDN Terminal Adaptors (TA) has fallen to the price of modems used on ordinary telephone lines.

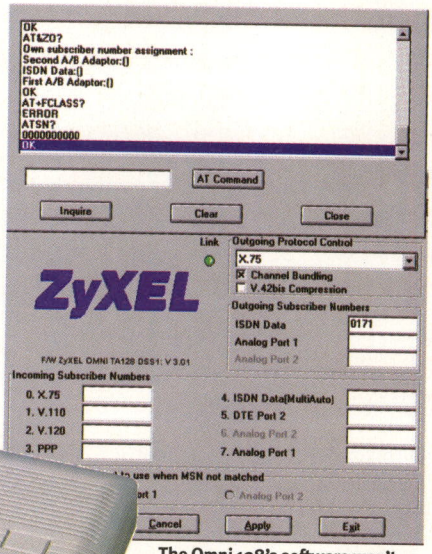
The main attraction of the Omni TA128 is the two serial ports, which can connect two computers to the Net at the same time. The ISDN phone line is divided into two channels and each of the channels becomes a separate phone line, so you can even connect to different ISPs if you want.

If you're using Multi-Link Point to Point Protocol, you can only connect one computer. The protocol binds both of the ISDN channels together to give a 128k connection.

Apart from this, it's a pretty standard ISDN TA. The drivers and configuration software for Windows are supplied on floppy disks and CD, but there's no support for Macs. Two analogue ports will connect your phones or faxes, and can be configured and assigned with separate phone numbers (if this feature comes supplied with your ISDN line).

This is done through the configuration software, which is more functional than elegant. And the inclusion of only a single serial lead is strange when Omni expect you to connect the TA to two PCs.

Connecting two PCs simultaneously could be useful, but I'm not sure how many people would use it. There's plenty of software that lets more than two PCs share a modem on a network (such as WinGate, at **www.wingate.com**), and this would probably be a far more flexible solution in the long run. It might also be worth looking at the ISDN router option – this plugs into a network and automatically connects when anybody accesses the Net from their desktop. The dual connection feature of the Omni 128 increases its cost, making it more expensive than many. But it's a pretty good ISDN TA that worked without any real problems (despite the rather weak software). If you only need to connect two computers, and you've ruled out the other options, it's worth considering.



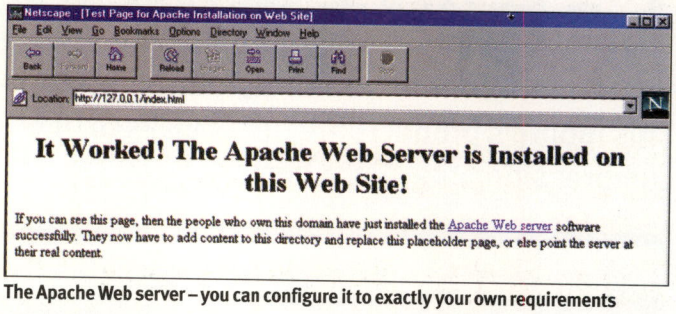
The Omni 128's software won't win any prizes for aesthetics, but it does the job

★★★☆☆

Omni ISDN TA

Price *£222*
Pros *Can connect with two PCs at once*
Cons *More expensive than some, software is rather weak*
Contact *UK2NET*
Phone *(0171) 538 0253*
www.uk2net.com

WEB SERVER



The Apache Web server – you can configure it to exactly your own requirements

Apache 1.3.3

The world's most popular Web server makes the jump to Windows

The Apache Web server is one of the legends of the Internet – written entirely by Internet users and free to download, it has acquired a cult following among Web site authors and techies alike.

Originally written for Unix and Linux, this popular server has recently been rewritten to run on Microsoft Windows. It's primarily designed for use with Windows NT, but it should run on other versions – we had no problems installing and running it under Windows 95 or NT, but it's unlikely you'd want to use Windows 95 for a proper Web site – it simply isn't stable enough.

Apache isn't written by a software company – the people behind it are a loose affiliation of Internet programmers and users who wanted to create their own Web server. This makes them sound like a bunch of amateurs, but nothing could be further from the truth – you'll find some of the biggest names on the Internet involved. This unique method of programming means features tend to happen more quickly than on normal programs – if you want to add a function, you can write it yourself.

There's also an API (Advanced Programmers Interface) that allows you to write your own add-ons or integrate other programs with Apache. Included in the 2.7Mb download is the full source code and enough details to let you write your own add-ons. If you're a competent programmer, you could even rewrite bits of the server – it's all written in C++. The Windows verion of apache also supports many of the features of the Unix version, such as rapid CGI script execution and a nice little system that makes a guess at the correct page name when you mistype or misspell it.

There is one thing worth remembering – because of the way the program is written, the authors make no guarantees, and you have no comeback if it crashes and deletes your Web site. The online manual describes this eventuality as "beta quality code".

We had no problems installing it under either Windows 95 or NT 4, although there are several bugs and quirks that the authors know about and are working on. Despite these minor problems, it seems stable – we had this version running on a test site for a full week and it didn't crash once.

Configuring and running a Web server like this isn't a job you should take lightly – you have to configure it from the command line or through a config file. This process is fully documented, but it's not something you should consider if you're not familiar with the ins and outs of Web servers.

If you want a simple, out of the box solution, this isn't for you – try Microsoft's IIS or O'Reilly's Web site. But if you want a server which you can configure to exactly your own requirements – one that is constantly being tweaked and improved by people at the cutting edge of Internet technology, then this is the product for you.

Richard Baguley

★★★★☆

Apache 1.3.3

Price *Free*
Pros *Cheap, very flexible and includes source code*
Cons *Still some bugs & quirks*
Contact *Apache Group*
www.apache.org

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For most people, Total Web Solutions is pure commonsense. Shouldn't you be finding out about services that range from Web Hosting to Domain name Registration, from E-mail facilities to Microsoft Frontpage, from Secure Servers to ODBC and ASP, from Real Audio and Video to free technical support? Or have you got an appointment at Waterloo?

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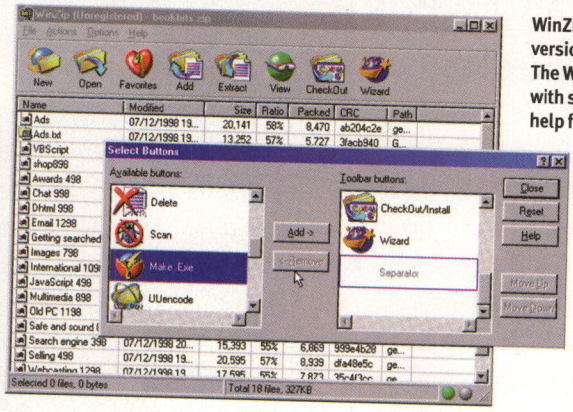
FILE COMPRESSION PROGRAM

WinZip 7.0

The best archiving program for the Net gets a facelift



WinZip's interface hasn't changed since version 6, so it remains easy to use The WinZip wizards have been improved with some improved (if rather succinct) help files

The basic principle of programs like WinZip is simple – by compressing files, they use less disk space. If files are smaller on the Net, they download faster and put fewer demands on the network. If you're downloading a program with several hundred associated files, Winzip also lets you download a single file that contains them all.

These programs aren't new – they've been around since people started running out of disk space – but they've become easier to use. WinZip 7.0 boasts a number of new features that make it extremely easy to learn, such as a user-configurable toolbar, support for a number of new compression formats (such as Microsoft's CAB format) and an improved help function. The wizard system (which takes you through the process of compressing and decompressing files) has also been expanded and improved, with new in-depth help files for each of the stages.

The other major addition is the new Internet Browser system, which allows you to open a zipped file directly from a Web page – it automates the process of saving and uncompressing the file. With earlier versions, you had to select Save file to disk in the browser and then open it within Winzip.

The improvement might not sound too radical, but it saves a lot of time and fiddling that many people find confusing. This feature isn't included in the standard package – it's available as a separate download from the Web site at **www.winzip.com**. Some of the new additions are nice (such as the Internet Browser), but they haven't changed the fundamental nature of the program, which remains excellent.

ZIP compression is a well known standard, and because of this, there are several other programs which can deal with the business of zipping and unzipping files – but WinZip is still the best of the bunch. Definitely one for your toolbox if you want to compress or decompress your files quickly and easily.

Richard Dinnick

★★★★★

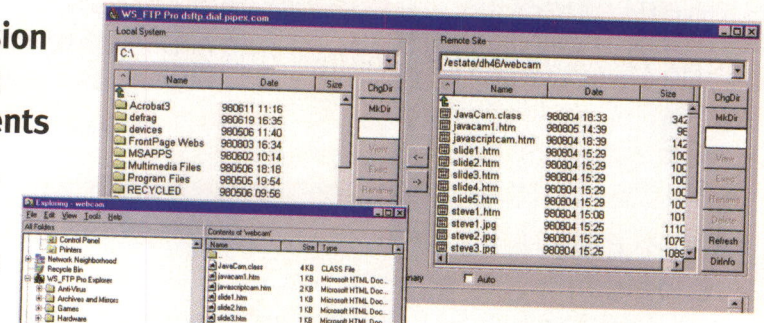
Winzip 7.0

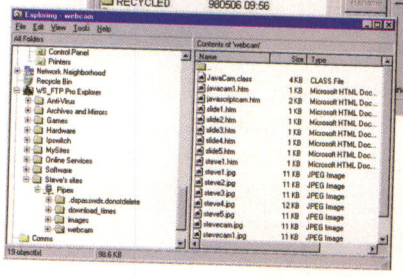
Price *$29 (approx £17)*
Pros *Easy to use and flexible*
Cons *Not that much change from previous versions*
Contact *Winzip*
Phone *001 713 610 1432*
www.winzip.com

FTP CLIENT

WS_FTP Pro 6.0

An improved version of one of the best Windows FTP clients





The WS_FTP Pro classic interface is the same, but comes with new features and three great new utilities

WS_FTP Pro is also integrated into Explorer, using the same engine and the same site directory information. You can drag and drop between FTP sites

You might not know what FTP is – even if you do regularly use the Web. But if you become interested in creating and maintaining your own Web site, you'll soon have to look for the perfect FTP client.

WS_FTP Pro 6 has always been an excellent utility, but the latest upgrade takes it a step above the competition.

You have to choose between using the classic interface or an Internet Explorer window. Both support drag and drop, but the IE interface doesn't seem like a remote site – it looks like a set of folders on your desktop. Neat. It's also integrated into IE itself, though it won't instigate a dial-up connection for you.

Other new features include a site manager (which shows FTP sites as nested folders rather than lists), a Quick Connect feature (for sites which aren't on your list) and the ability to go back and delete folders – empty or not.

You can now move files directly from one FTP site to another, but only using IE. Three separate utilities are supplied with the main program, though it's hard to see why they're not built in. The first is the Find utility, which will search a remote site for files based on size, dates and/or names – though it isn't integrated into the IE Find feature. It works well and it's easier than manually climbing up and down directory trees.

The scripting tool is simple to use and lets you create WS_FTP Pro scripts to move, update, delete and rename files both locally and remotely. It also creates and removes folders and performs several housekeeping tasks.

The scripts can run at predetermined times, but WS_FTP Pro won't dial at scheduled times, and Ipswitch says it has no plans to supply a dialler. The last new utility is Synchronise. It synchronises a local and remote directory structure and assumes the newest files are the ones to keep. It also removes files which are no longer present in your source structure.

Synchronise is also script-controlled, but it's easier to use than the main scripting tool. Using the wizard, it only took us 30 seconds to create a script which synchronised a local test folder structure with a Web site – it was fast and worked first time. The price of this upgrade makes it unbeatable.

Steve Patient

★★★★½

WS_FTP Pro 6.0

Price *£27.50*
(V5 users registered after Sep 1, 98 - free upgrade) Free trial version
Pros *Explorer integration, Site to site transfer, Synchronise feature & Scripting*
Cons *You can' t schedule dial up*
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Phone *001 617 676 5700*
www.ipswitch.com

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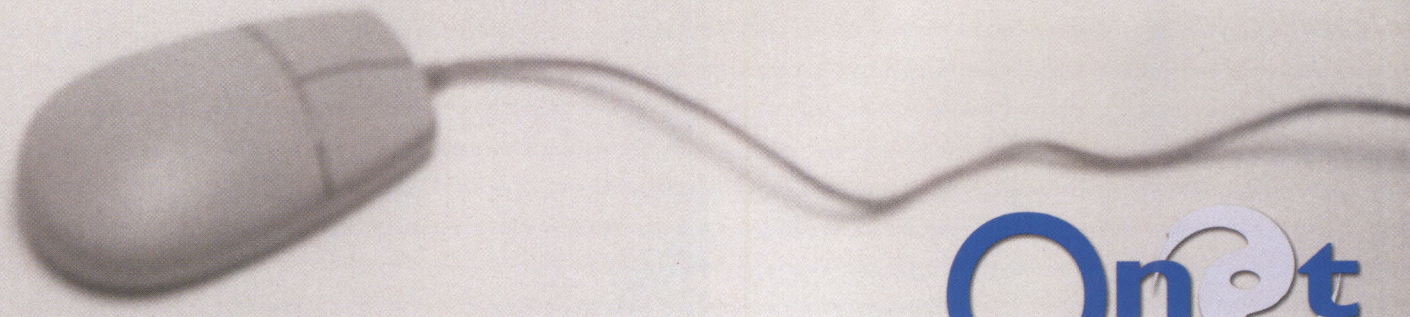

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Not quite ready for Joe Public

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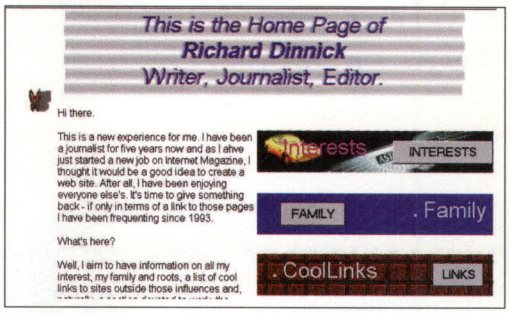
Web!

The homepage creation tool that NTM claims anyone can get to grips with



Web! is easy to use – you can create your own homepage in under half an hour

NTM (Noble Twin Mountain), the software publisher from Holland, has launched into the homepage creation market with Web! If you're one of those people who have always thought about creating a Web site – but have never done it because you've neither the time nor the inclination to learn a programming language, and it all looks a bit scary – Web! might just be the software for you.

The marketing blurb says: "Advanced software packages are not very easy to use ... they're costly and often not readily available". So Web! sets itself up as a simple product that aims to avoid some of the complications and problems you might get with more complex software. In some ways, it fails at the first hurdle because it asks you to start by installing IE4, so that Web! will run smoothly. It's not complicated, but it is a rather annoying start.

Once it's up and running, the task of designing homepages is as easy as visiting one. The manual isn't a huge help to people who like to dive straight in, but it's well written and useful in the latter stages when you're ready to upload your homepages.

But my main gripe with this user-friendly program is that it's too simple. Its unique selling point has become its biggest drawback

You can't select more than one object at a time, so rearranging your design can take forever, particularly when you have multi-layered items (such as a text box with a link on a background).

NTM claims its new software "requires no specific knowledge about the Internet" – perhaps an overambitious claim. Web! lets you add a variety of effects to the boxes you create, but the CD doesn't come with any sound or image files, so if you want to embellish your site a bit, you have to trawl the Net looking for multimedia archives.

The Dutch publishers seem to have confused people who are new to Web page design with people who've never used software before. And even though you might be new to both, it becomes frustrating when Web! won't let you carry out basic tasks like resizing a text box (presumably for fear of blowing a fuse in your brain).

I managed to create a credible homepage in about half an hour. There were no problems with understanding the interface, and the software performed quickly and without complaint. You can get online help from Baboon Shop, NTM's support page. The bottom line? Web! does exactly what it says on the packet.

Richard Dinnick

★★★☆☆

Web!

Price *£39.99*
Pros *User-friendly, takes a short time to learn and is cheap*
Cons *A bit too simple*
Contact *NTM*
Phone *(0113) 234 0444*
www.baboonshop.com

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Munich Tel: +49-89-92185-294 Fax: +49-89-92185-295
Paris Tel: +44.171.681.1863 Fax: +44.171.681.1862
Amsterdam Tel: +31.20.524.1473 Fax: +33.15.301.3155
Frankfurt Tel: +49.69.25577.013 Fax: +49.69.25577.012
Sydney Tel +61.29.475.0232 Fax: +61.29.475.0231

*Prices exclude naming authority fees. Setup fee: £29.95 for the EZsite web site package. Prices and features subject to change without notice.

Expert help

If you've got a Net problem, email it to us and we'll field it to our distinguished panel of experts. From Web design to legal advice (and let's face it, that would normally cost a fortune), we can answer your questions. We'll also be picking the best reader's tip each month, so get them rolling in – the best one wins a £200 online shopping spree

Readers' questions are answered by our panel of experts. Send your query to faq@internet.emap.com

Richard Baguley is our deputy editor. He'll be answering your technical questions on everything from relational databases to digital signatures.

Mike Slocombe has designed sites for clients that include Snickers, Zenith Films, Direct Connection, NCR and Evolution. He also produces Urban 75, an irreverent online magazine. Mike will be answering all your Web design queries.

Roger Gann is a freelance computer journalist. He specialises in connection issues. If you're having trouble with dial-up networking or want to know why your 56K modem just isn't talking to your ISP, he's your man.

Michael Chissick is the head of Internet and IT law at Field Fisher Waterhouse, a city of London law firm with 50 partners. He'll be ruling on your legal problems.

We regret that we cannot answer any queries other than those printed in the magazine.

Looking for a good home

Q I've recently set up a Web site using my university server. However, because my Web site involves some commercial use, I intend this to be temporary, as my university will not like me taking up their Web space for my commercial gain. Is it possible to transfer my Web site to another server (my home PC server, for instance)? I've phoned my home ISP, LineOne, and it won't let me use my free Web space for commercial reasons either. I want a co.uk URL and I don't mind changing my ISP to do this. Can you tell me the ISPs that allow commercial operations and those that don't?
James Westgarth
james.westgarth@lineone.net

Richard Baguley replies: Running a Web site from your home would cost you a fortune since you'd need a leased line of your own. Instead, you should take a look at ISP and hosting packages that will host your site and register a domain name for one price. There are plenty of companies which offer this sort of service – just look through the adverts in this issue for a selection. Any ISP offering this kind of service will have no problems with you using the space for commercial purposes.

If you want to use the free Web space given to you as part of a dial-up account to turn a profit, it's a different matter. If all you have on your site is a brochure with a telephone number, most won't complain, although you should explain to them what you are going to be doing with the Web space and check how they feel about it. To move your Web site, update any references to the old site in your pages and then upload the pages to your new server.

It might not be Freeserve that's causing speed problems – take a look at your modem

Get Freeserve up to speed

Q What connection speed can I expect to get when using my Freeserve account? Following a recent modem upgrade to a Diamond v56, I decided to try out Dixons' Freeserve. I had a few teething problems with sending email, but after some trial and error, everything now seems fine.

Except that, when connecting, I get connection speeds of between 31-33kpbs. Is this normal? If not, is there anything I can do to improve my access speed?
Richard Roberts
richard@owenroberts.freeserve.co.uk

Richard Baguley replies: 56k modems are rather badly named – we've never managed to get a full

56kbps connection. The best we've ever achieved is 53, and it's far more usual to get connections in the 30-45 range, though your 31-33kbps does sound rather slow. It sounds like your modem is making a V.34 connection (which has a maximum speed of 33.6kbps).

You can tell what sort of connection you're getting by going into a terminal program (such as HyperTerminal, which comes with Windows 95). Dial the Freeserve number manually (by typing ATDT and the number), and see what the modem comes back with when it's made the connection. If it says anything about 33.6/V34, it's not even trying to make a 56k connection.

Freeserve supports both X2 and K56Flex connections, but it doesn't yet support V.90 (the new standard for 56k modems). The various 56k standards aren't cross compatible – if you're using a modem that supports V.90, it can't talk to an X2 or K56Flex modem at 56k, and will automatically default down to a slower speed. You can get around this by downloading the code for K56Flex from the Diamond site (at **www.diamondmm.com**) and installing it on your modem.

WinGate allows more than one PC to use a single modem and Internet connection

Can two surf as cheaply as one?

Q I'm considering signing up to BT Highway. We have two computers and my wife and I are simultaneously online on separate lines. I'm looking for a way to bring my phone charges down. I already take full advantage of BT's discount packages, but my bill gets higher and higher. I already have both PCs linked together via two Ethernet Network cards. My basic question is, how do I connect both PCs through one Line via an ISDN adaptor to BT Highway?
Richard R Michelson
MichelsonNews@dial.pipex.com

Richard Baguley replies: There are two ways you can do this – with software or hardware. The software solution involves using a program such as WinGate (which you can find at **www.wingate.com**), which lets one PC use the modem on another PC as if it was connected to it locally.

The hardware alternative is to get yourself an ISDN office router. This connects to your network. Whenever you try and access the Net, it automatically connects over the ISDN link and hangs up when you're done.

There are various different models of ISDN routers available, such as the Zyxel Prestige 100WH and the LinXpeed (both reviewed in the November 1998 issue of *Internet Magazine*). Alternatively, you could consider an ISDN modem like the Zyxel Omni 128 (reviewed on page 90 of this issue) with two serial ports, which let two computers connect at once.

Get interactive with image mapping

Q I've recently got into Web site design and I'm looking for software to help me create image maps. Instead of just a static navigation bar, I want to make my more interactive with rollovers and stuff. There seems to be lots of software out there, so it gets

And the problem is...

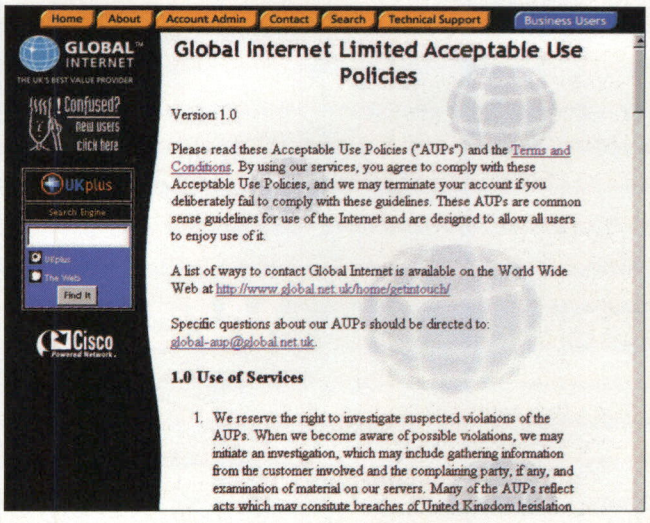
In this section of Expert Help, we take readers' problems to the source and try to get them an answer. Martin Williams had a problem with Global Internet, who cancelled his account over spam messages it claims were sent from his account

"I had my Internet service provision cut off by Global Internet without discussion or warning. They said I'd been spamming. Being a beginner, I never even knew what the word meant. My Web site took me months to develop and now it's wiped off the face of the earth."

We asked Global Internet what happened: "Approximately 1500 emails were sent, causing us to be black-holed (a system to block spam), causing disruption and inconvenience to other subscribers. Mr Williams mentioned his machine is left on all the time to receive faxes. Someone else in his house could have used his account, but it's still his responsibility. Due to the serious nature of the offence, his account was terminated immediately. In lesser cases, we warn the customer first, even though we have the right to terminate immediately."

As with many incidents of this type, the truth is rather hard to track down. The message does seem to have come from Mr Williams' machine (Global Internet supplied us with copies of their logs), but it's possible someone used his machine without his knowledge. He admits his password was saved to disk, so someone could have gone online by simply double-clicking on the DUN icon. It's also possible his machine was used by a hacker to send the messages using a system such as Back Orifice (see our December 1998 issue), which allows someone to remotely control it over the Internet.

The moral of this story is to guard your ISP account details. You should only save your password if you're sure no one else can get access to your machine, and if you suspect that someone may be using it, change your password immediately. Most ISPs have a system to do this automatically through their Web site. It's a good idea to change your password frequently anyway, in case someone gets hold if it through other means.



Global Internet's Acceptable Use Policy (at www.global.net.uk/home/aup.html) specifically forbids spamming

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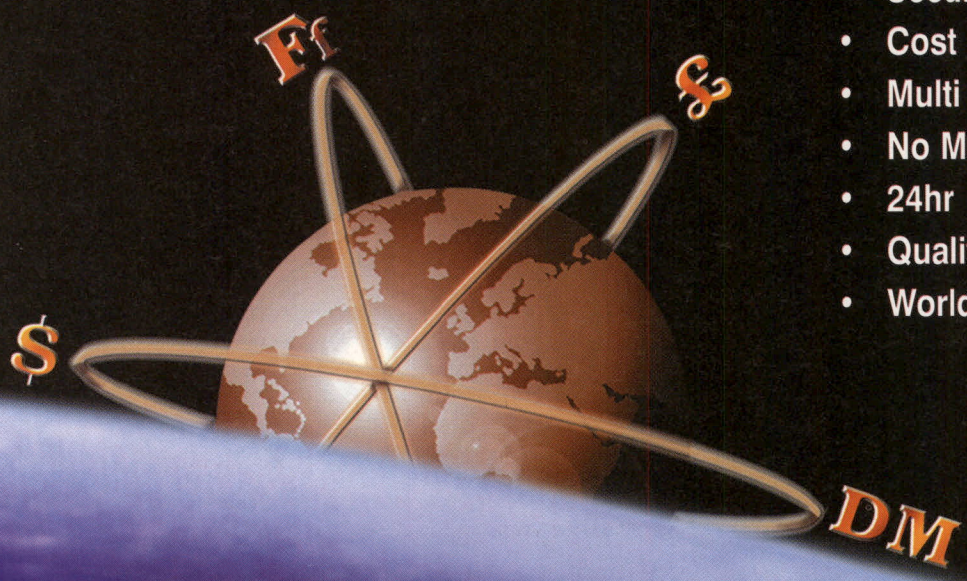

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European Headquarters

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confusing – can you recommend something?
James Whitehead
jameswhitehead@lineone.net

Mike Slocombe replies:
Fortunately, there are quite a few packages out there which make knocking out graphic rollovers pretty easy. If you're feeling flush, Macromedia's Fireworks is a powerful Web creation graphics package that'll help you create all the necessary graphics. Specify the On and Off states for the rollover, and then export the whole caboodle with the necessary HTML and JavaScript ready to go. Just export the graphics and cut and paste the code into your own page. Adobe's cheaper Image Styler does much the same job, but is nowhere near as flexible and lends itself more to clip art and template solutions.

If you've got a capable graphics package (the shareware Paint Shop Pro is just fine) and an HTML or text editor, you can do the whole thing yourself. The script for this was featured in *Internet Magazine*'s 'Expert Help' feature in July 1998. Alternatively, for details on how to get JavaScript rollovers working, visit: **http://javascript.developer.com**, **www.infohiway.com/javascript**, **www.webreference.com/javascript/index.html** and **www.superscripts.com**.

It won't work on all browsers (IE3, for instance), so make sure your site can still be navigated for those using non-JavaScript enabled browsers.

Too much too young

Q I'm considering starting to surf the Net from home. But I don't want online services – I can get the software and information from cnet, dejanews or FT.com. My Web pages reside on Geocities and I have an email address at Rocketmail and at work. Is there an ISP that offers just the Internet connection, a low monthly fee and a local rate telephone number to access the Web?
Andreas 'Tom' Gutjahr
a.gutjahr@cd.co.uk

Richard Baguley replies: Any of the free ISPs we looked at in our January 1999 issue will do what you ask – they all offer Internet access for the price of a local phone call (apart from BT Click, which is a little more expensive). They offer additional services, but you don't have to use them. The other option, if you'd rather pay a monthly fee, would be FreeDotNet (at **www.thefree.net**), who charge a minimum fee of £30 for two years access, or Onet, who offer unlimited access for £125.

Finding my own (domain) name

Q The UK domain name registrar Nominet does let you register your own domain names, but it's hardly a process for the faint hearted.

It might not be riveting to look at, but you'll find everything you need to sort out a domain name at Nominet

I plan to design and place Web sites for clients on a small-scale commercial basis, but I'm finding it difficult to get the information I want. Who do I approach to register domain names directly on behalf of clients? What is the authority, and how did it come about? I also want to rent commercial Web space on a server, but I'm getting all sorts of different information and vastly different quotes. Who should I approach, and what kind of price should I be looking at?
Andrew Finn
andrewfinn@hotmail.com

Richard Baguley replies: If you want to register domain names yourself, you're going to have to talk directly to the appropriate bodies for the various top-level domains. For co.uk domains, this is Nominet (at **www.nominet.org.uk**) and for .com domains it's Internic (**www.internic.net**). Both organisations let you register domain names directly, but you'll need to have some level of technical knowledge and a couple of DNS servers. As part of the registration process, you'll have to supply the details of the DNS servers that will handle the domain and have them ready to accept the new domain and answer queries on it.

The difference in price for Web hosting will depend on the precise nature of the package on offer – many companies include things such as domain registration and database links, while others might offer a more basic service at a lower cost. Put together a list of precisely what your site will require and send it around to several companies to see what kind of deal they could provide.

Internet junkie

Q I have a rather big problem – I'm addicted the Internet. I can't stop myself from connecting for long periods of time, sometimes even at peak rate. I can't seem to stop, and it's costing my father far too much money.

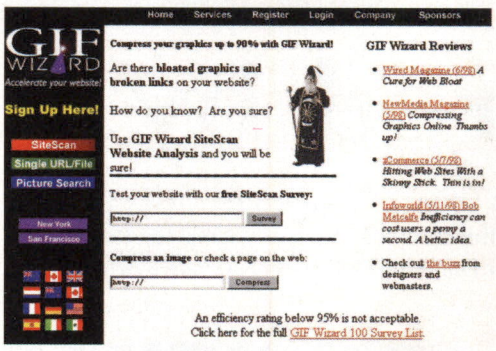
Is there a program that will limit the amount of time I can spend on the Internet, and which would also specify when I could and couldn't connect? It would also be useful if the settings could have a password, so I can't be tempted to change them.
Malcolm Mitchell
malcolm.mitchell1@virgin.net

Richard Baguley replies: There are numerous programs that can be used to restrict access to the Internet, such as TimeWatcher (which is shareware, available from **www.geocities.com/SiliconValley/Bridge/7500**). You can use it to restrict the hours you're allowed to access the Net. TimeWatcher also uses a complex password protection system, so it should be able to stop you from running up your father's phone bill.

Watchman (available from **www.geocities.com/SiliconValley/Pines/2858/watchman.html**) or Stop'em (at **www.jelsoft.com/products/stopem/index.html**), both of which restrict when programs can be used and by whom. All of these programs are shareware – you can download and try them, but you'll need to pay a fee if you want to keep using them after the trail period.

Top reader's tip wins £200 voucher

Is your Web site taking too long to download? Are there broken links? Well, I've found a solution at GIF Wizard (**www.gifwizard.com**). Put in your URL and it checks the first 10 linked pages checking of your site. Once the scan is complete, it reports any broken links and also any images which are downloading too slowly and recommends compression to bring it up to speed. For more than 10 pages, you have to pay for the service ($69.95 a year).
Tim Almond
almond@saqnet.co.uk



Get your site sorted with the mystical powers of GIF Wizard

Thanks for the tip, Tim. GifWizard does a great job of spotting bandwidth-wasting images on your site, but it doesn't pull any punches – it told me a site I designed had an efficiency of less than 50 per cent!

Tim wins himself a a £200 shopping spree at top audio-visual Web site Unbeatable. With over 2,500 products, it's the place to find everything from a roll of film to a widescreen telly. Backed by mail order specialists, Capital Sound & Vision, all orders are despatched by first class post or next day courier. You can find Unbeatable at **www.unbeatable.co.uk**.

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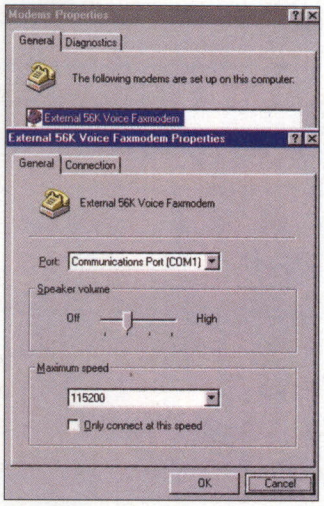
Big bauds R us

Q I have a Compaq 56k Dfi modem but can only connect to my ISP at 33.6k. The baud is 33600K. Is the baud the problem or is there anything else I can do to speed my modem up?
Marcus Ohm
marcus.ohm@virgin.net

Richard Baguley replies: Irrespective of the modem you're using, you should set your PC to modem connection at 115,200 baud. You do this through the modem's control panel by changing the maximum speed setting of the general tab on the modem properties window.

Many modems will connect at a slower speed than they're capable of if the PC to modem connection is too slow. The other possibility is that 33.6kbps is the maximum connection speed to your ISP. The Compaq modem is based on the K56Flex standard, and if your ISP doesn't support this, the fastest connection you'll get is 33.6kbps. If your ISP supports the new V.90 standard, take a look at the Compaq Web site to see if there's a modem upgrade to support it. The Compaq software upgrade centre is at **www.compaq.com/support/files.**



The modem's control panel determines how quickly the PC talks to the modem

Conversion time

Q I've seen a feature on some sites that lets you see prices in pounds or dollars. You can even switch back and forth between the two. I'd like to put this feature on my own site. Can you tell me how to do this – is it done with JavaScript? There's an example at is at www.energy-music.com.
Adam Wright
ghf62@dial.pipex.com

Richard Baguley replies : The Energy music system doesn't use JavaScript – it's done using active server pages, a system on Microsoft Web servers which generates pages as they're requested. You can't really use this yourself, as you can't access the scripts that do the business of converting. There are several alternatives – with no shortage of online currency converters, you could put links to sites like X-Rates (at **www.x-rates.com**) or Thomas Cook (at **www.thomascook.com/cgi-bin/xchgo11_calculator.pl**).

Alternatively, you could use a Java applet such as Foreign Exchange (at **www.environment-search.com /exchange.htm**). This automatically updates its exchange rates once a week, so you don't have to worry about changing the rates yourself. im

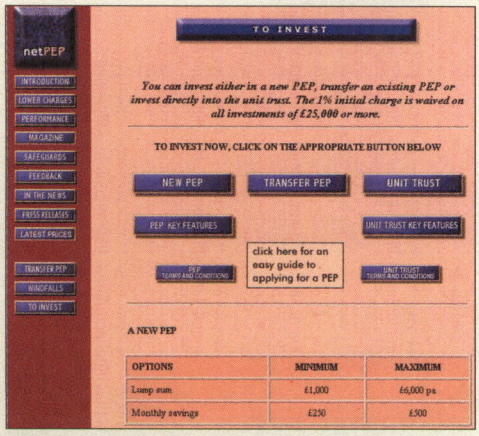
Legal Brief: Buying financial services online

What protection do you have if you buy financial services over the Internet? Michael Chissick looks at the law behind finance on the Net

More people are buying PEPs, TESSAs, life assurance, mortgages and other investments online. But UK regulators of financial services have only recently started to address how to regulate the sale of financial products on the Net. The laws regulating these products online are the same as those for traditional methods of selling, such as mail, face to face meetings and the telephone. Using the Net, UK residents can buy products from outside the UK, and this raises concern among the UK authorities, which have neither the ability nor the powers to control the sites.

US regulations only apply to Web sites targeted at US residents. By contrast, the UK financial services authorities regulate investments if they're made available in the UK. In determining whether a Web site can be accessed in the UK, the authorities will look at a number of factors:

- **Whether a Web site is located on a server outside the UK**
- **If an investment is directed generally at UK investors or the world at large**
- **Whether an investment is only available over the Net**
- **The disclaimers and warranties on the site**
- **The extent to which positive steps have been taken to limit access to the site**



Sites like www.netpep.co.uk have made buying financial services easier, but what are the pitfalls to watch out for?

Financial services legislation is designed to protect consumers. For example, UK ads can't make wildly optimistic projections about the returns you can expect from an investment. They must also state the value of investments can go down as well as up. If you're buying investments online, it's wise to play safe and opt for the services of a reputable UK company.

A product from a company based overseas may promise you more, but if the investment turns sour, you'll be left with no protection other than suing the company in its own country. The EU has started to address these issues. A new directive to regulate financial services, sold via the Net and other distant methods, has been published in draft form. However, we're a long way from a co-ordinated global approach to regulating online financial services.

Michael Chissick is the head of IT and Online Law at Field Fisher Waterhouse (at www.ffwlaw.com). He can be contacted at Michael.Chissick@ffw.sprint.com

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(Internet Access Made Easy, Issue 9 Oct/Nov 98

"The best thing about the service is the cost, or should I say lack of it."
(Practical Internet, Issue 19 Oct 98)

Special Award: For reliability of connection –
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(Source: Practical # 11)

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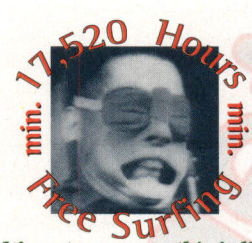

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How to stop unwanted email

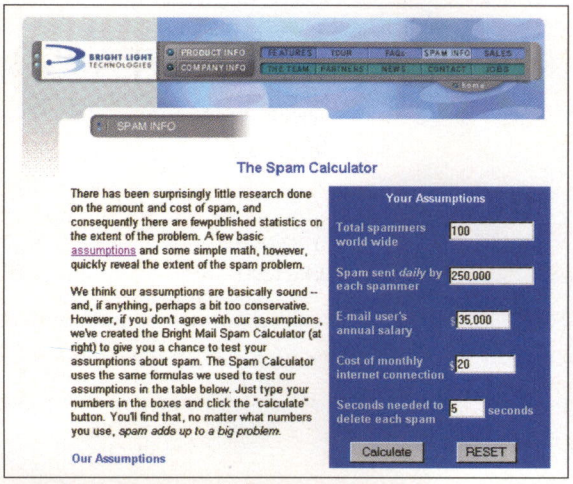
Unsolicited email, or spam as it's affectionately known, is on the increase. But you and your server can stop it wasting your download time and money – if you know how. Steve Patient tells you what to do if you've had enough of junk mail

Sixty per cent of what Royal Mail delivers is junk mail. You can pick it up and throw it out, knowing someone else's time and money has gone straight in the bin.

But with junk email, popularly known as spam, this isn't the case. Spam invades your privacy – your PC is personal turf. It costs you and your provider time and money to collect and deliver it, check that it's spam and then to dispose of or complain about it.

You might say spam is trivial, but wait until it's you finding tens or even hundreds every day on your computer – a third of all email is now unsolicited and commercial. Suddenly it's an outrage, swamping your favourite means of communication and taking advantage, damn it. Now it's no more Mr Nice Guy.

But spam is hard to stop when it can be sent from anywhere and is essentially free to the sender. For the spammer, there's nothing to lose. If one in 10,000 recipients responds, the spammer stays ahead of the game. So let's stop them here and now.



If you don't believe spam is a problem, check out the spam calculator. However you rejig the numbers, it's costing millions

They know where you live

The most obvious first step is to deny the spammer your email address. But how do they get them to start with? The first way is by using harvesters. These automated programs pull email addresses out of newsgroups, and have been extended to pull them out of Web pages.

There's another point worth making here. Never send your address to anyone claiming to maintain a list of people who don't want junk email – it's always spammers collecting addresses.

So let's look at foiling harvesters in newsgroups. If you use newsgroups, you probably want to hear from like-minded people, not spammers. We'll leave aside the issue of spam posted to newsgroups.

You can post your address in a newsgroup and avoid having it harvested. This is because people are more flexible than software. The most direct approach is address munging. This will ensure your address remains a mystery to idiot machines, but remain obvious to people. Consider the address **spatient@dial.pipex.com**. Change this in your news client to look like this **spatient.removethispart@dial.pipex.com** or, ➢

Starting points

There are endless anti-spam sites on the Web. We're not claiming these are the best, but they're excellent starting points for advice, software, organisations and links.

- **Can your mail server be relay raped?** http://maps.vix.com/tsi/ar-test.html
- **How to prevent mail relay for different servers** http://maps.vix.com/tsi/ar-fix.html
- **An excellent collection of anti-spam links for users and administators** http://members.tripod.com/~JOWazzoo/ConsumateSpamLinks666.html
- **Spam calculator – how much is it costing you?** www.brightlight.com/cgi-bin/Spamulator2.cgi
- **Join the fight** www.cauce.org
- **Real Time Black Hole List and more** www.seattlelab.com

1ski.com

The UK's Premier Online Ski Guide

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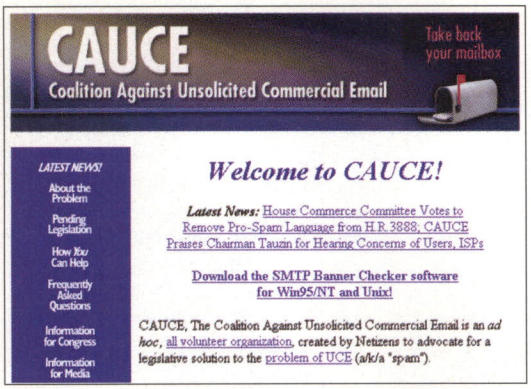
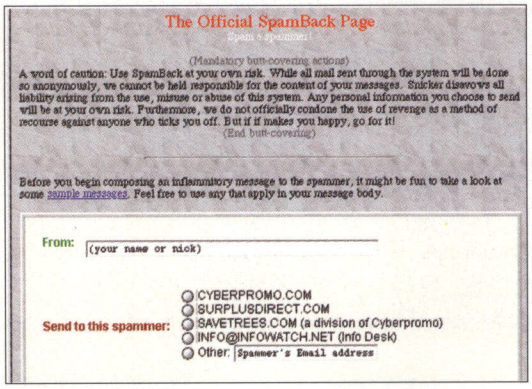
- 100s of late booking deals
- ski and snowboard news
- ski shop

www.1Ski.com



The Coalition Against Unsolicited Email co-ordinates the fight against spam with an emphasis on legal controls – essential in the long run and inexcusably left out of the recent EU directive 'concerning the processing of personal data and the protection of privacy in the telecommunications sector'. Contact your MEP



If vengeance is your thing, you can get your own back by spamming the spammers with Spamback

perhaps for the younger reader, **sTpAaKtEiTeHnEtC@dAiPaSlO.pUiTpex.com**.

People can figure out what's going on but machines haven't a clue, so anything the spammer sends to you will bounce back. Address munging is highly effective. You can also put a completely fake email address in the header and include a more subtly munged address in the body of the message or SIG file for even greater protection.

Caught in the Web

Some of you are already thinking this isn't going to work in a Web page where you have a mailto: tag. Quite right. People expect to click, not think, on Web pages. In practice, though, it's even easier to cheat Web page harvesters, assuming you're maintaining your Web site. The best solution is to take advantage of a company offering free email addresses – ironic since they're responsible for a lot of the spam.

Every month or so, get yourself a new free email address, abandon the old one (leaving it in place to fill up the accessory's mail server) and update the mailto: on your Web page.

This dramatically limits the success of any harvesting scheme. It punishes the guilty and would kill site harvesting completely if everyone did it. Revenge can be yours. Your mailto: always works and the whole exercise is invisible to anyone browsing your Web site. And there's more.

While you're about it, why not take the opportunity to poison the spammer's database? You can hide false email addresses in standard Web pages or devote a whole page to them. You can write a script to generate thousands of fakes. But why bother when there's a good one at **http://Spam.abuse.net/Spam/tools/makebait.txt**.

Even better, check out **e-scrub.com/wpoison** – a site which gives you a way to redirect Web page email address harvesters into an infinitely deep black hole. What fun.

Now the buts

These techniques are useful when you're dealing with random spammers targeting the world, but the fastest growing problem area is UCE (Unsolicited Commercial Email), the polite name for spam from 'respectable' companies.

How to trace a spammer

If a spammer runs a mail server, it's possible to forge the mail headers. But all email has to be relayed, and anyone relaying mail with forged headers is either in league with the spammer or ignorant. Either way, you can deal with them.

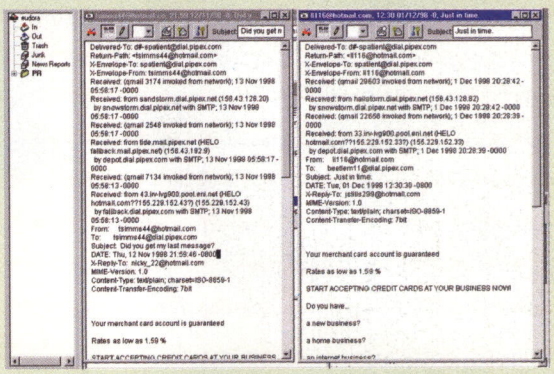
Each relay adds its own information to the header. Email clients tend to conceal most of this information, but you can ask to see it. In Eudora, for example, hit the Blah-blah button.

Alongside the various domain names, you'll also see IP numbers, whose owner you can track down. Confront the owner of the first legitimate domain you can find in the header and tell them they're helping spammers.

If the domain belongs to the company providing the spammer with access to the Internet, ask your ISP to block it and report it to the Real Time Black Hole List.

If they claim they don't know about being used as a spam relay, give them one chance to overcome their ignorance and secure their servers. Then ask your ISP to block mail from the offending domain and report them.

Don't bother contacting the spammer directly. You're just confirming the email arrived. They certainly won't pay any attention to your requests for them to cease and desist.



Hotmail claims to be eliminating spam 'one spammer at a time'. Good joke. This one regularly changes his name – but not his spiel – and Hotmail just continues to hand him new accounts

There's no excuse for letting spammers rape your mail relay. There are tools for every server

UCE comes in two forms – the first is a mass email sent out on spec by a marketing department or company which sincerely believes you'll want to know more about its new vibrating nosehair remover. The second is email generated automatically in response to your Web site visit, online registration or suchlike.

This is then followed up every time the marketing department can think of any reason, however specious, to remind you of their product's existence. But it's still not a valid reason to invade your mailbox.

And this is the crucial point. If you've asked to be kept up to date with a development, product or process, you've entered into a relationship with the organisation, so its email is legitimate communication. If you haven't, it's spam. Tell them so.

Similarly, if you subscribe to a commercial mailing list and then unsubscribe, all subsequent email trying to regain your interest is spam. Filter it to deep space.

The good, the bad and the ugly

You might think large, respectable companies would be above this sort of behaviour. Not so. AT&T, for example, offered a free graphics utility called DjVU for download. In the licence agreement were the words, 'By installing the software you agree that AT&T, or third parties on AT&T's behalf, may send unsolicited email messages or other unsolicited communications to you.' Never trust a telephone company. Or any other company or organisation for that matter. It's still legal for them to sell your email address if you didn't specify that they couldn't pass it on. And, while under EU and US law you have to be asked if you agree to them passing it to third parties, the question can be in tiny writing nearly the same colour as the background, so look carefully for the tick box and click it.

Defence is a problem, because so many Web sites require a valid email address before they'll let you on – though it's always worth trying a fake.

It's also worth trying an experiment if you suspect a company of deceit. Create a new free email account and use it on the supposedly 'respectable' commercial site. If you get email from anyone else, report them to the Data Registrar if it's a UK company, or the relevant body if it came from abroad.

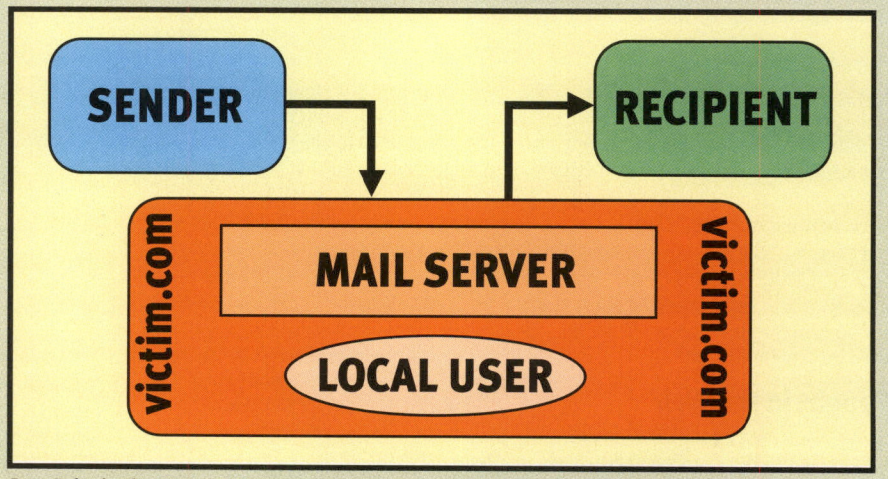
You can use the same approach to protect yourself from spam. Keep one email address as your 'real' one, and only give it to people you trust. Use a different one for your entries on Web sites. Then you can ditch it without the inconvenience of asking friends and colleagues to update address books.

The email administrator's tale

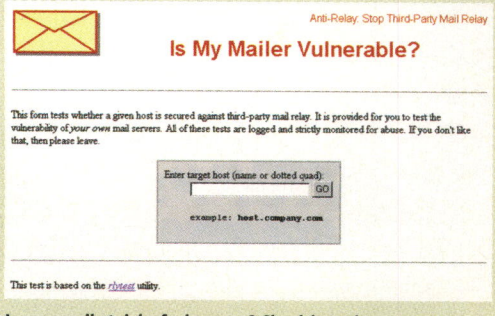
At the beginning of 1998, an IMC (Internet Mail Consortium) survey found 55 per cent of all mail servers were still vulnerable to 'rape relay' attacks, where a spammer uses someone else's mail server to send out their messages (by using a fake return address). No email administrator wants their mail server to relay spam, but ignorance and idleness abound, and that's what spammers love.

A good first port of call for administrators who want to remedy this and improve their spam-blocking efforts is **www.seattlelab.com**, home of one the best anti-spam server software vendors and keeper of the Realtime Black Hole List. It also has tools you can use to maintain real-time spam blocking lists for any server software.

When a company being used for spam relay finds its email relay cut off, it either mends its ways quickly or goes out of business. Either will do. Having stopped spam relay at your site, there's still the question of how to stop spam reaching your users, or originating from them. An important step is to ensure that your own customers can't use your server to send out spam with forged headers. It will already be in your terms of service, but you can force your mail server to only accept originating mail with honest information in it.



Rape Relay is when a mail sender uses your mail server to deliver spam in the hope of confusing anti-spam measures. It makes it look like it came from the raped relay instead of the original sender. The raped relay shouldn't be involved in the transaction at all if it were legitimate



Is your mail at risk of relay rape? Check it out here

Other controls include limiting the number of addresses that can be put on an email's To: or Cc: line. Some ISPs claim it's impossible for them to do this because certain customers have a legitimate need for bulk email, such as charities emailing their members.

If so, it's an administrative problem. The default should be no mass mailings. If necessary, set up a separate mail server for mass mailings with even tighter access rules, and make people pay for it. It's justified.

You can also prevent customers from accessing any less responsible administrators' NNTP or SMTP servers beyond your site using suitable router rules. Incoming spam can be fought at the server level or by a gateway machine that knows about SMTP. You can buy one of these gateway filters as a black box and simply plug it in between your Internet link and your server. You can configure the gateway's rules yourself and get it to automatically update its built-in lists which come from the vendor or a third party.

Spam costs you money in bandwidth, administration and credibility. You don't want spam to originate at your site or be relayed through it. You might end up on the Realtime Black Hole List yourself.

Responding to spam

The standard advice is to never reply, just filter. OK, it works, but sometimes a more positive approach can produce more satisfaction. In practice, it's worth tackling legitimate companies about spam. It's never worth responding to get rich quick merchants, outright crooks or the certifiably insane

1. Filtering

It's the most effective way to deal with scam spam. If no one ever sees it, spam becomes pointless. Never respond, especially to a 'remove' address, it just proves your address is working.

2. Web page references

If there's only a Web URL (as with pornographic spam), complain to the postmaster of the domain owner or hosting company. To find the domain owner, go to **www.internic.net/cgi-bin/whois** and add a filter.

3. Unsolicited commercial email

If there's a working return address in the email, and if you're convinced it's a legitimate company, reply politely but firmly, telling them you're happy to accept their ads at £20 for each one you download. There's a strongly-worded reply which you can modify to suit your purposes at **www.junkbusters.com**. If the ads keep coming, and if the company doesn't pay your bill, wait until it reaches a couple of hundred pounds, and take them to the small claims court. You'll win.

4. Cry havoc, and let slip the dogs of law

If your modem is also a fax (as most are), tell companies their message violates the Federal Telephone Consumer Protection Act of 1991, and Collateral Code of Federal Regulations (47 CFR 64.1200). The TCPA allows a private right of action against the sender of unsolicited advertising. The recipient can sue for $500 or actual damages – whichever is greater. In the UK, the relevant act to quote at them is the 1984 Telecommunications Act, which says you can't use a communications device to cause a nuisance – and spam is definitely a nuisance. Well, it might work.

5. Go for the network administrator

Companies, ISPs and other organisations with email should always have an address called **postmaster@domain.name**. This is who runs the mail server. Forward the spam email to them and let them know their system is being used by spammers. If you keep getting it, ask your ISP to block email from the domain.

7. Get heavy

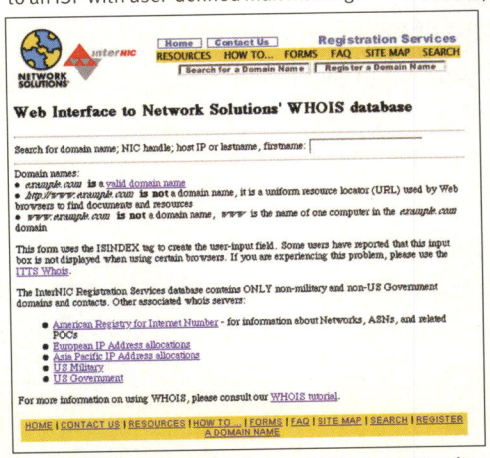
If you suffer from excess testosterone and can't bear a passive approach, visit **http://freeweb.digiweb.com/entertainment/snicker/spamback.htm**, the Spamback page. Use it to send anonymous hate mail to those who spam you. There are plenty of other great links to help you get your own back. Inefficient but fun. Oh, and don't blame us if your, erm, direct anti-spam action lands you in court under the same laws you can use against the spammers.

Filter, filter, filter

There are a number of ways to deal with spam before resorting to changing your email address – which should remain the final solution. The most effective is filtering. There are three places where, as an end user, you can use a filter – at your ISP's mail server so it never even reaches your mailbox, on downloaded headers before downloading the mail itself, and on your machine by automatically routing that unwanted email straight into a bit bucket.

Not all ISPs have mail server filters. Of those that do, AOL's is easily the best. Its members have the option to block all email, emails from non-AOL members, from selected addresses and/or from domains. You can even choose to only accept email from specific addresses. So if you never want to be troubled again, join AOL. We'd like to see all ISPs offering this level of control.

If joining AOL isn't an option, change to an ISP with user-defined mail filtering.



If you're looking for someone to complain to, you can track down the domain name owner

While most now block known spammers (usually after the spammer's changed domains – pause for sound effects of horses bolting and stable doors slamming) without troubling to tell you, it's great to be able to define your own filters as well.

The guilty parties

Companies who offer trial Net accounts and free email addresses without identity checks make the spammer's job easier.

When ISPs turn rogue and support spammers, you have to rely on other ISPs to deal with them (see The email administrator's tale, previous page). Companies handing out free email accounts are just as irresponsible. If they don't take the time to establish the identity behind the account, their only recourse is to cut it off. That can't be done until after the spam's gone out, and no follow-up is possible. This is pointless.

My own aproach is to filter all email from free accounts to the void. When a service lets you sign up as a five year old Albanian girl from a made up town with no vowels (as Yahoo! does), you don't want email from it.

If someone wants you to value their online identity, they should make sure there's a known link from it to them. If it's then used for spam, we know who to sue.

Bolt-on goodies

A huge number of anti-spam add-ons are available, along with email programs dedicated to dealing with spam. Most of them rely on huge updatable lists of known spam domains, spam subject lines and so on. They can be effective in cutting spam down, but none will eliminate it, as it only takes a minute to set up a new identity on the Net.

Sensible add-on spam filters work in the background and, if you trust them, you never see the email at all. It's killed on the server before it's downloaded. Some filter spam to a specific folder, which implies you don't trust it and will check it all anyway, so there's little point in doing this.

The better ones let you enter a choice of addresses, which should always be let through. You can filter out, for example, all Geocities email except the account you've set up to check out a Web site, company or program.

Many of the add-ons appear to have been written by those seeking revenge and they offer all kinds of automatic flame responses. There's no point. By responding, you're merely confirming your existence and inviting more spam.

Better add-ons will bombard the offending domain's postmaster with complaints, and a few will bombard every domain and/or address in the email on the principle that everyone's guilty. Don't do it – you'll just add to the problem.

In the long-term, if everyone were to ignore spam, most of it would go away. In the short-term, a combination of filtering and legal action/public opinion – if the spammer is rich enough – is the best approach.

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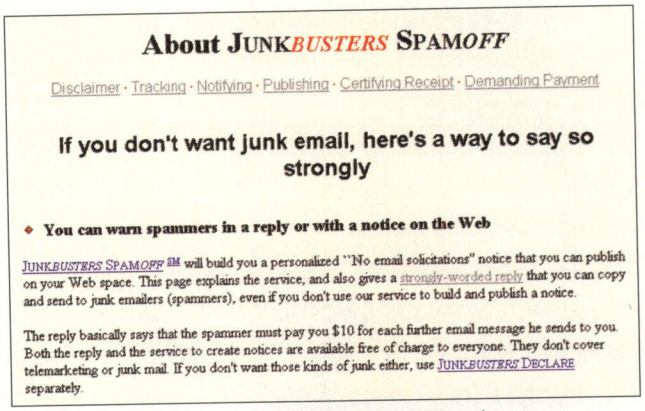


The Junkbusters site has some good advice and sensible actions you can take against spam. Well worth a look

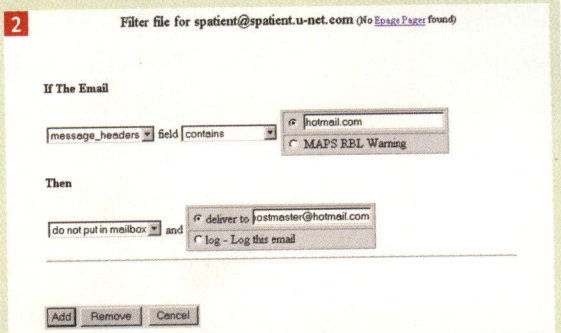
Setting up a filter at U-Net

If your ISP offers filtering at the mail server level, you should take advantage of it. This helps you and your ISP. With an ISP filter you never even download the headers

1

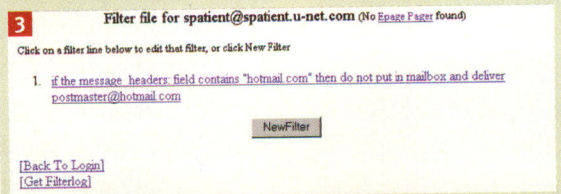
The first step in setting up personal mail filters at U-Net is to log into the system. I've given up believing Hotmail's claims to being on top of spam

2



So, from now on, all mail from it is to be returned to **postmaster@hotmail.com**, which should be interesting when it starts sending out automated replies

3



And here the filter is confirmed. Drop dead simple. Ask your ISP to offer you the same service

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How to add Flash to your Web site

Macromedia Flash is a new way to make Web pages sing and dance. And it's not just for the big boys. Tom Calthorp explains how to add Flash to your own site

Have you ever come across a Web site with flying graphics, quirky sound effects and anti-aliased fonts? Well, it was probably created using Macromedia Flash, and the chances are you were pretty impressed with what you saw. Flash is in a league of its own when it comes to Web design and graphics, and you don't have to be a C++ programmer with 25 years of brain surgery experience under your belt to learn it.

So, what is Flash?

Put simply, Flash is the standard for vector-based Web graphics on the Net. You can animate a combination of well designed, scaleable images to move around your screen, change their colour, make them transparent over time, and add buttons, sounds, bitmap images and anti-aliased fonts.

You'd expect Flash to be incredibly complicated to learn, but it's the only professional multimedia tool controlled by the animator/designer. There's no programming language, and although you might seek professional help for large or complex productions, you're more than adept enough to learn Flash if you can work the actions pallet in Photoshop.

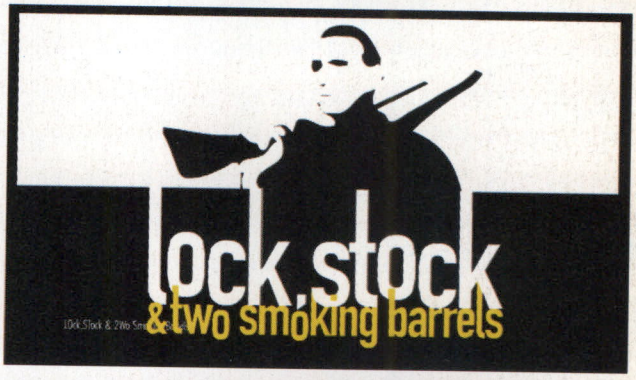
In order to understand how Flash works, you need to understand the difference between a vector and a bitmap. Bitmap images are pixel-based. They're rendered on screen at 72dpi. Although we use JPEG and GIF compression algorithms to bring down the size of these images, they still amount to a large download for the average Web user. Vectors are mathematical descriptions of a shape, animation or font. It's an approach with several advantages. The image can be scaled quickly and with no loss of quality, as your computer recalculates the size over time. The most impressive advantage is the small file sizes that make vectors ideal for the Web.

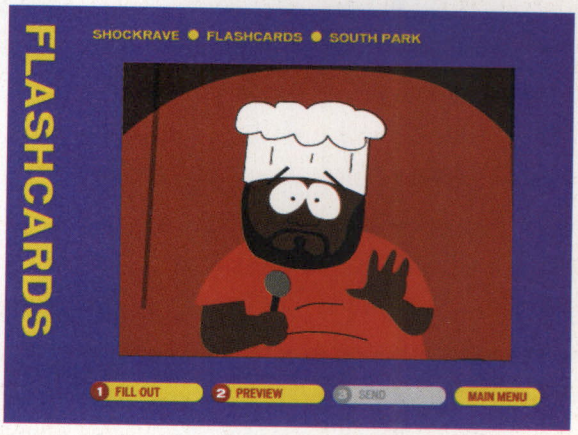
Flash streams data down a modem, which means, if you have a 30K file, it doesn't have to download the entire 30K in order for you to see it. A 28,800 modem will download at approximately 2400 bytes per second. A Flash movie has a number of frames, so it plays in frames per second (fps). Flash's default is 12fps, so with 2400 divided by 12, you have 200 bytes per frame. This means Flash will attempt to play as soon as the first 200 bytes have downloaded, keeping you entertained while the rest of the data is downloading or streaming in. Your Flash movie could be 200 or 300 kilobytes – unacceptable as a graphic on a Web page – but totally acceptable as a Flash movie.

So what exactly can it do?

Flash has many other features – you can import and animate bitmaps and make them transparent, as with vectors. You can use Freehand or import Illustrator files if they're your tools of choice. Flash has a wonderful set of natural drawing tools that most people hate for the first few days because they're different from anything you've used before. But Flash has learnt from applications that have failed in this respect in the past. You'll soon discover how easy it is to draw in this package. For a cartoonist, Flash and a Wacom tablet is an ideal combination.

You can move or animate objects over time. There are three ways of doing this. The obvious and traditional way is to draw all movement frame by frame. There are two types of tweening (the process of moving from one frame to another) built into Flash – shape and motion. A motion tween is simply taking an object, moving it a few frames, and asking





Great Flash in action. Web films from Anthronauts at www.anthronauts.com. The *Lock, Stock and Two Smoking Barrels* site (www.lockstock2barrels.com) is definitely not for muppets. Send Flash animated cards from the Shockrave site at www.shockrave.com

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Getting started with Flash: creating a simple animation

Install and open the trial version of Macromedia Flash – you can get this from the cover CD of previous issues of *Internet Magazine* or from Macromedia's Web site at **www.macromedia.com**. You'll also find an example of the finished article on our Web site at **www.internet-magazine.com**.

There are a couple of things worth setting up before you start. Under the File menu, select Preferences, check the Show frame pop up menu checkbox and close the window. From the View menu, select Work area. This will centre and resize the Stage. There are three areas you need to be aware of:

1. **The Stage** – where you create your animation.
2. **The Timeline** – where you enter the frames and keyframes you require.
3. **The Toolbar** – the main set of tools. It's fixed to the top of the Stage, with the toolbar as a floating pallet.

What we'll do in this tutorial is create a two-second 'shape tween'.

Select the pencil from the toolbar. More options now become available in the lower half of the toolbar. There's a small pop-down menu with a 'stepped line' on it – this is the pencil mode. Select the rectangle (Fig 1) and draw one on the left-hand side of the stage. Using the Paint bucket tool in the toolbar, fill the rectangle with a bright red (the colour selector is in the bottom half of the toolbar (Fig 2)). Reselect the Arrow tool and double-click on the rectangular line you you have drawn. Press delete on your keyboard to leave a rectangular red fill.

You're in an animation package, so you have just drawn a rectangle on frame 1 of your movie. We'll now draw a circle two seconds later and tween between the two. Flash's default frame rate is 12 frames per second, hence two seconds is 24 frames later.

From the timeline, highlight the frame in layer 1 on frame 24 (Fig 3). Double-click (Mac) or right click (PC) on the Frames drop down menu and select Insert blank keyframe – your rectangle should disappear. Reselect the Pencil tool and select the circle from the pencil mode. Now draw circle on the right-hand side of the and, using the fill tool, fill it with a green. Remove the line from the circle to leave you with a green circle (Fig 4).

On the timeline, select the Frames drop down menu on frame 1 in layer 1 and select Properties (Fig 5). From the Properties window, select the 'tweening' tab and select Shape from the drop down menu. You'll now see a green arrow drawn along the timeline between frame 1 and 24 in layer 1. Hit the return/enter key on your keyboard to see the animated tween. Note the colour, as well as the shape, is now tweened (Fig 6 shows it at the halfway point).

And if you want to, you can shortcut the above by opening 'example1.fla' once you've downloaded the example from the Internet Magazine Web site.

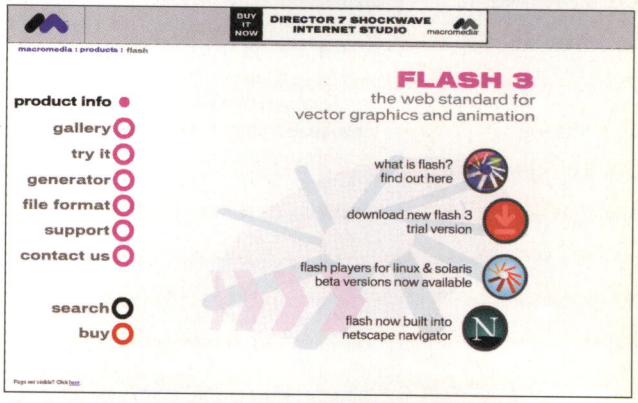
Flash to work out the animation. A shape tween takes a shape (drawing) and morphs from this shape to the next (see the Getting started with Flash box above). The motion tween is a popular feature because it's at the heart of Flash's animated heart.

Flash can import sound files and use any Postscript level 1 or 2 or TrueType font. It can have problems with some Postscript fonts on the PC. The easy way to solve this, and many other font problems on either Mac or PC, is to buy Adobe Type Manager Deluxe.

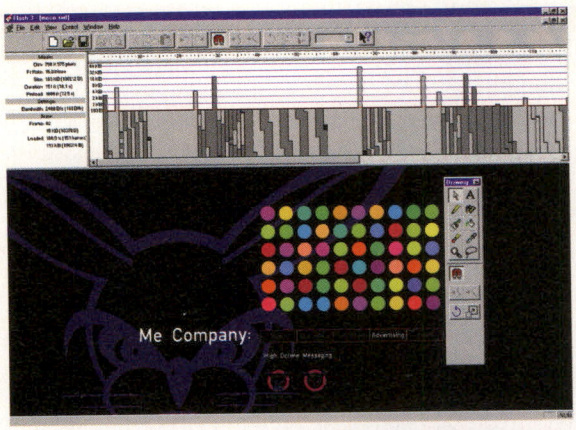
What do you want to do?

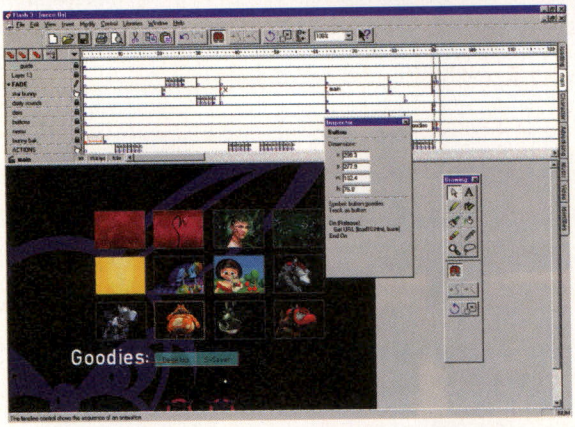
You could be forgiven for thinking Flash is only good on a Web page, but it can do much more. You can save Flash movies as standalone projectors for either Mac or PC. This means you can use your files on CD-ROM (or even floppy disk). There's a whole market for Flash-based presentations and interactive training guides that go nowhere near the Web. You can take your Flash movie and, using Mac Sourcery's software (**www.macsourcery.com**), make it into a screensaver – it resizes the movie to fill the screen without loss of quality. This may not sound like a big deal, but try doing it with Macromedia Director.

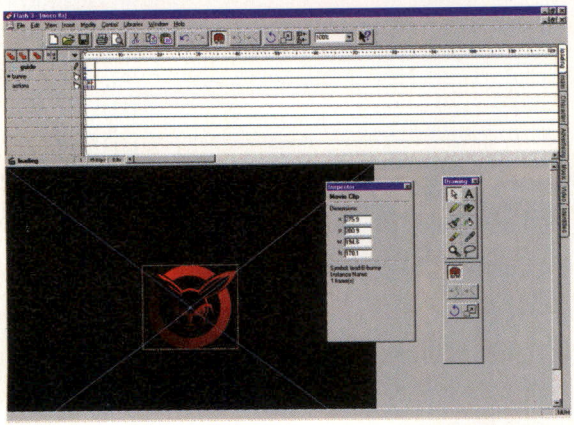
You can output for WebTV or to additional hardware/software for TV, so Flash is flexible if you're considering using it with other formats. But the main area of use will be the Internet – no surprise there.



The Macromedia site has a wealth of goodies, advice, downloads and technical support. You can buy Flash here at www.macromedia/flash







The Macromedia Web site (at www.macromedia.com/flash) has excellent tutorials and help

There are a few things you should know about using Flash on the Web. It uses a plug-in that's between 70K and 110K depending on the playback platform. The good news is that the plug-in is available for 68k and PPC Macs, Win3.1/95/98/NT and Linux/Unix platforms. Thankfully, the argument against getting you to download a plug-in, in the case of Flash, is being brought to a close, thankfully. It now ships with the Mac 8.5 and Win98 operating systems and is built into Netscape Navigator 4.5 and above.

Seventy per cent of visitors to the Smudge site (my company) already have Flash installed, most of them without knowing it. As with the ActiveX controller on Windows platforms, you can install it without experiencing anything more than a pause before the Web page opens. Companies not associated with entertainment and edutainment, such as Shell, Railtrack and BT, are using Flash on their corporate Web sites, so within a short period of time, the majority of people on the Net will have Flash playback capability.

For the design and animation community, the Web is still fraught with buzzwords and an endless stream of geeks. But once you've used Flash, you might never need to grasp HTML. Flash 3.0 comes with a small application called Aftershock. This writes the HTML page for your Flash movie. If you're Web phobic, it'll bridge the gap between you and your client. If you're a Web pro, it's got many other uses. Aftershock doesn't just write clean HTML – it writes JavaScript detection routines for plug-in detection on Mac and PC as well as code for using Flash with native Java browsers. It also creates a GIF for non-Flash, non-Java users.

So, should you use Flash on your Web site?

Flash works best on version 3 browsers and above, so if this is what your visitors are likely to be using, go for it. But don't make someone download a plug-in to see something in Flash that could have been done as a GIF.

Flash has so much going for it that designers are now filling your screen with Flash and reducing HTML down to a bare minimum. But what about providing your audience with a non-Flash version of your site? I would advise against this, although you could provide a site with a bare minimum of HTML, which would contain contact details and information that should be available to business people inside an intranet, as they may be barred from installing the plug-in. If you need to do this, don't try to copy your navigation design from your Flash site (it'll probably contain drop-down menus, animated options...), it never works.

Getting started with Flash doesn't take long and the tutorials are good (see our simple starter on the previous page). There are a few warnings to mention, though. Flash's drawing tools are very different, so try not to bring your 10 years of Illustrator experience to Flash – you'll find it hard to embrace its excellent drawing capability. If you're familiar with Director, forget everything you know about timelines, tweening, sprites, cast members and key frames. Flash takes an entirely different approach.

You can easily get extensive help with Flash, either locally or from the Web. The tutorials are worth going through two or three times, especially if you're new to animation. The HTML-based help sections for both Flash and AfterShock are a bible of information and well worth reading.

The Macromedia Web site (**www.macromedia.com/flash**) has excellent support and 'Expert Speaks' areas to help you. If you've got a set of

Five key things to remember when you're using Flash

If you've already made a start with Flash, these top tips might just help...

1. In your movie, you'll animate things that enter the stage or exit the stage. Work in the Work area view to see off stage (go to the View menu then select Work area). You can switch between this and the Camera view at any time. There are plenty of shortcuts in Flash. Ctrl-W will switch between these two views. Switching to Work area expands the stage to fit the screen, Ctrl-1 will show you the stage at 100 per cent. You can expand this again by using Ctrl-3 to show all.

2. You'll undoubtedly hit a point where you have more than one movie open at a time. This will probably happen when you're copying items from one movie's stage to another. The shortcut for swapping movies from front to back is Ctrl-Shift-Tab. When you are playing back the movie in the previewer, use the same combination to return to your stage without quitting the previewed movie.

3. This is an old and boring tip, but it'll never be more important than when you're learning about timelines. Use layers on the timeline and lock everything after you've finished working on that layer. Flash will only let you animate one thing, on one layer, at any one time. If you accidentally copy something to a layer while a tween is in progress, the animation will do one of two things – it'll either look totally wrong or it just won't work at all.

4. Under the Window menu is the floating Window Inspector (Ctrl-Alt-I). This lets you type in exact co-ordinates for anything on your Stage. It also lets you see what a Library symbol is called and what Actions are against it, without you having to enter the Properties-Actions window.

5. When drawing, try using the option key when selecting a line. This will let you pull the line out to a point, instead of a curve. These drawing tools make it simple for you to mould basic shapes into more complex lines and fill areas.

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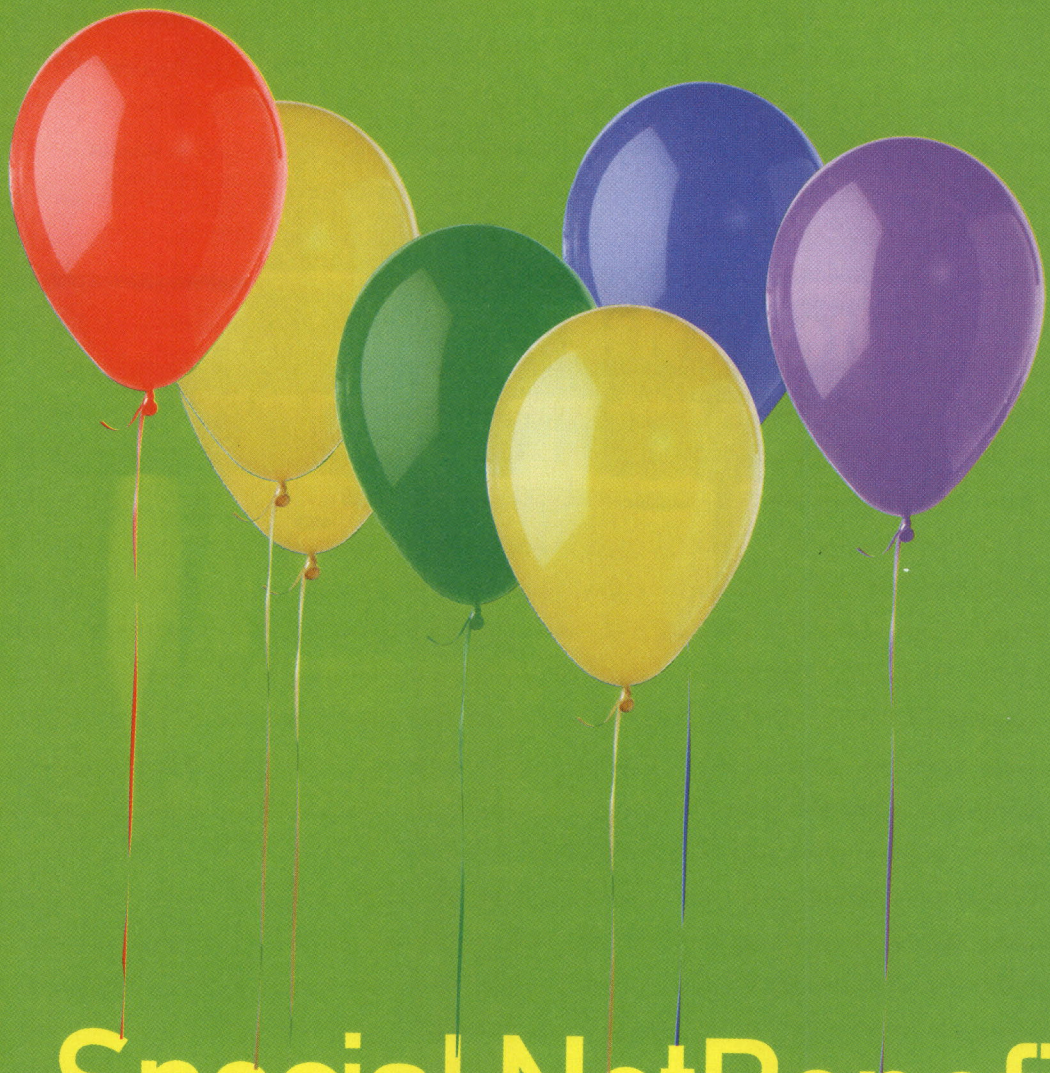

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There's a good reason to learn Flash. With a little experience, you'll soon be producing results that are simply impossible in any other package for the Web. Recent devotees include finance houses, oil companies, transport firms, the Lottery, and the telecoms industry. These are hardly small, entertainment, vertical market companies, but until Flash, they were all centering their images and putting everything on a white background. The corporates – the last bastion of the boring sites – are now adopting Flash for their next generation sites. Many of these companies are now adopting Flash because the player is open and has been put forward to the W3 committee as a standard for vector-based playback on the Web. im

Tom Calthrop is a director of Smudge, an Internet design consultancy specialising in Flash. You can reach him at info@smudge.com

Follow the series

This is the first in our three-part series on learning and using Macromedia Flash. The next two articles will cover:

- **How to make your Flash pages interactive**
- **How to move on to more advanced Flash animation**

Don't forget that you can get previous Web Professional articles from our Faxback service on page 133, or from our site at **www.internet-magazine.com/buy**

Some great Flash sites to visit

Flash is a highly flexible tool and its use varies widely across the Net. Here are just a few examples, all from UK-based companies

Spooky and the Bandit

This site is the mother of all UK Flash work. These guys were the first to play with Flash extensively in the UK, and the site is a true reflection of their expertise. Take a look at the stuff they've done for BT and Shell. Those of you on a PC will notice how they completely take over the user interface and make a better job than certain other operating systems manufacturers we might mention!

www.spookyandthebandit.com

Matinee

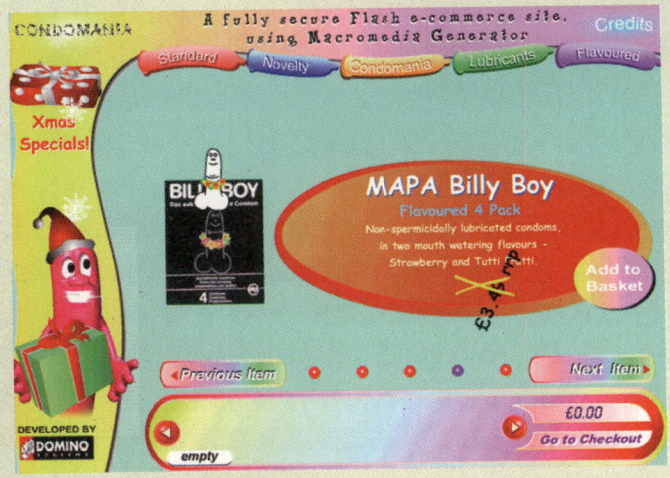
You'd never guess these guys play with video! You'll see a whole host of TV-style effects here. It's well worth a look, but there's a bug in it for Mac users running IE, so view it in Netscape if you're using a Mac.

www.matinee.co.uk

BBC's Spywatch

This site was designed by my company, Smudge, so it wouldn't be right for me to comment, but I can explain how it works. Once you enter the site, you'll notice you never have to refresh the page. This is because the Flash plug-in supports multiple layers of Flash movies, so we load in layers of movies, not new HTML pages. Because you stream in the content, you mustn't wander off, or you'll have to reload, so we use new windows for any HTML pages, and layers for teachers' notes and maps.

www.bbc.co.uk/education/lookandread



Domino Systems

This is a fun site with a serious undercurrent. The screens are fun and the fact that you're ordering condoms will create a laugh, but under the gloss is a serious e-commerce Web site. It uses Macromedia Generator, which is a server-side product we'll look at later in this series.

http://flash.condoms4u.com

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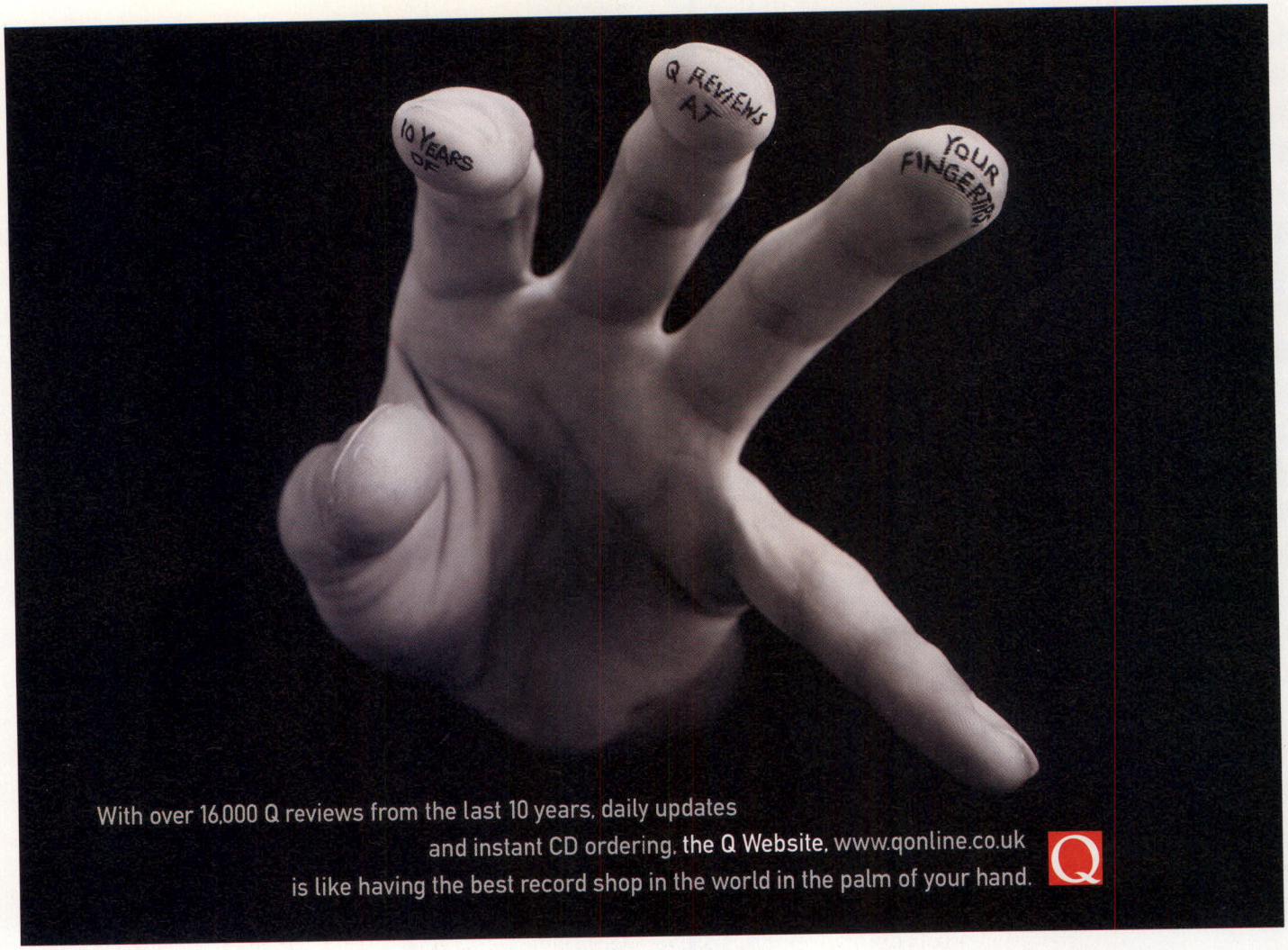

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Creating banner ads that sell

Research shows people don't mind banner ads appearing on the Internet. So with an explosion of e-commerce just around the corner, Steve Shipside shows you how to make your ads irresistible to potential customers

A recent study carried out by AOL into banner advertising found that nine out of 10 people responded favourably to advertising on the service.

Overall, 55 per cent of people in content areas and 48 per cent of those in chat areas recalled ads immediately after seeing them. At last month's AdTech conference in New York, research company INTECO said people are tolerant of ads appearing on their favourite sites.

Dr Harry Hoyle, vice president of research for INTECO, said: "At this embryonic stage of e-commerce development, marketers should be gratified to know consumer attitudes toward Internet advertising do not yet show resistance". The research, based on 2,500 detailed interviews, showed people see online advertising as less obtrusive than TV ads, and an acceptable price for free content.

Combine this with the emergence of online commerce and you have a potent argument for fine-tuning your banner ads. Peter Bishop, director of international trade at the London Chamber of Commerce, says we should brace ourselves for "an e-commerce explosion any time now. By the year 2001, Internet business conducted between European companies will reach over £40 billion, while e-commerce sales are estimated to reach a staggering £20 trillion or five per cent of global sales."

First things first

So the potential is there, but how do you approach this explosion with a 468x60 pixel banner advert? Well, before you break out the animated GIFs, the first things you should do is sit down and consider exactly what you want your advert to do. You'll want it to make you money in the long run, but the world of advertising isn't that simple. A well conceived ad should aim to build awareness, generate traffic or sell the product.

Brand building is the most obvious example of awareness, hence few banners are complete without the corporate logo. Generating traffic takes more than displaying your logo and expecting people to click on it. The AOL survey picked out bold colours and promises of new information as key factors that encouraged people to click on ads. This advice is reinforced by a quick glance at the Fast Clicks top 10 page, where the words 'Free' and 'Prizes' feature heavily and where the colours would make a highlighter pen blush.

GIF 89a animations are also eye-catching, followed closely by ShockWave animations, which offer greater flexibility with small file sizes. The aim is to bring people to a site where they'll make a purchase or enter a contest, handing

The Fastclicks top 10 most clicked-on banners are a pretty good guide of what appeals to people – the word 'free' and bright colours, for starters

Top tips

- **Get it right** – Make sure your 468 X 60 pixel banner is measured properly. Ask the advertising director of any major online provider about the amount of ads which are sent in wrongly sized.
- **Make it bright** – in either sense of word. Bright colours grab attention, but bright ideas are more likely to lure punters to your site.
- **Make it different** – think how many ticker-tape style banners you've seen and try not to become another statistic.
- **Make it move** – animation doesn't have to mean rocket science. Streaming Java or video is impressive, but some of the best results have been achieved with Flash, or even the humble animated GIF.
- Tell people why they're clicking. Many banners say 'Click Here', but the ones that catch the cursors are those that give a compelling reason, like teasing bits of information or corny comments like 'Win'.
- **Find out exactly how and where your ad is going to be seen** – will it be hardwired to a particular page or rotated through a number of locations
- **Find out exactly how many people have seen it** – click rates are a great way of counting, but the number of individual viewers means more in real terms. You have to identify your punter if you want a unique view, and that means setting cookies. Either bite the biscuit, or accept uncertainty.
- **Track your ads** – to know more about your visitors, you need thorough tracking, either through a professional agency, such as ActiveAds or NetGravity, or with one of the shareware tracking software systems like SAFE.

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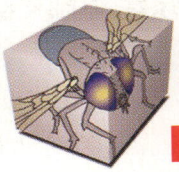

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over their personal information in the process. Turning the casual clicker into a form filler or purchaser is known as conversion.

Keeping it classy

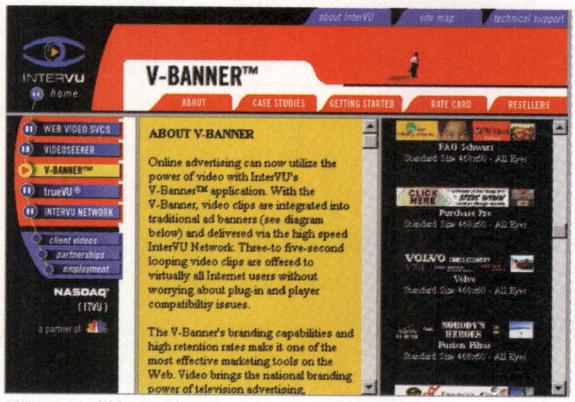
The banner ad approach is in danger of becoming the Web's equivalent of neon flashing signs. It's certainly catchy, but can often look garish and cheap. One solution is to invest in technology. V-Banner, for example, can incorporate three to five-second looping video clips into banner ads without causing any plug-in or player compatibility issues. Disturbing Behaviour, which uses this technology, reported three times responses to its video banner than its static ad. Volvo has used the technology to put clips from its TV ads onto the Web. There's a full list of examples at the V-Banner site (**www.intervu.com /vbanner**).

To take advantage of this technology, you send video (in Beta format if possible) or coded content to V-Banner, which encodes it in six standard formats and puts it on its distribution network. Clicking on the video will distribute it automatically from the nearest server. The service is charged by CPM (cost per thousand impressions), at around $8 a time, plus a negotiable fee for the encoding.

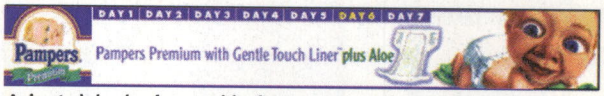
Use your imagination

But if throwing money or video at your banner ads is out of the question, you can still do wonders with a copy of Flash and some imagination. Take the Pampers advert (you can find it at creator Blue Marble's site at **www.bluemarble.com**). The animation has a slider showing the daily improvement in the smoothness of the celebrated baby's bottom. Not to everyone's taste, but Proctor and Gamble, which owns the brand, claims it generated an impressive 22 per cent click-through (a typical click rate is five per cent or less).

Another ingenious approach comes from Hewlett Packard, which used Flash to create a banner ad you could play with.

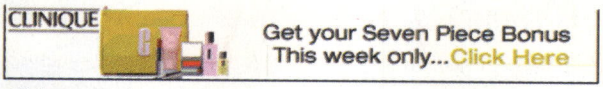


V-Banner will loop video clips into banner ads for you without causing any plug-in or player compatibility issues

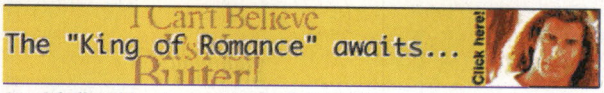


Animated cheeky chappy with a bottom as smooth as, well you know

A new trick for the old dog – a Flash banner where you can control the right



Clinique uses a lure which then takes users to a form where they feed back vital information



I can't believe it's not... erm... male model Fabio – apparently

The Pong banner lets you control a Pong paddle and play the retro game against Jerry, the HP engineer. This did more than just increasing click rates – it engaged people long enough to read a ticker tape message from Jerry along the top of the banner. You'll find it at **www.redsky.com/work**. Other examples of Flash and Java-streamed animated adverts can be found at Electronic Hollywood's site (**www.electronichollywood.com**) – you'll need the Flash plug-in already installed to see the site.

A little lateral thinking can go a long way. One US banner ad features the male model Fabio, with the teaser 'The King of Romance awaits'. Click on this and you find yourself in the I Can't Believe It's Not Butter Web site. The site is pulling in the punters by serialising a romantic

Buying and selling advertising

Selling your ads

Designing ads is unlikely to prove a breadwinner on its own, but as a complement to Web design, it's worth being able to offer on top of regular page design.

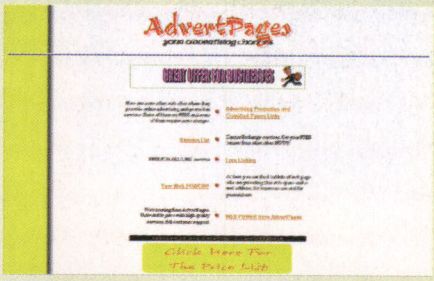
Remember, you'll be working in a very limited format, usually 400x40 pixels. To make this compelling and interactive, while remaining true to your client's brand values is no small task. It'll mean you having to juggle a variety of design and animation skills, depending on the brief. You'll need to know Flash/GIF 89a/Java to bring life and sparkle to a strip the size of a toothpaste tube box.

As with any design work, there'll always be takers, but remember you're definitely at the bottom end of chain when it comes to payment. While agencies might charge hundreds for their product, you can't just say 'I could do that for less'. First, they're almost certainly offering a whole host of other services into the bargain, and second, undercutting the professionals puts you into competition with all those kids working away under the bedclothes with a torch and a copy of Dreamweaver. Local companies are unlikely to pay more than they would for a single page of HTML - £50 or less.

Buying ad space

Placing ads in prime locations (portals, Playboy, that kind of thing) is costly and usually means hiring a professional media buyer. But there's a whole second tier of online agencies who deal with their own sites. Listing them would take several pages, but if you have the time to plow through, you'll find links to most of the UK and US online media agencies at **www.advertpages.co.uk/list_advertising.html**.

Prices vary enormously, but most are negotiable, so it doesn't always pay to take the rate card as gospel. To give you an idea, Great British Pages charges £5 per thousand 'adviews', or £69.95 for a targeted (hardwired) ad. The wonderfully-named Free Pint charges £18 per thousand adviews, but promises a more specific audience of knowledge workers. Alternatively, you could always join a free link exchange. You must have your own Web site with which to trade. Every time a person visits one of your Web pages displaying a banner ad,



You can get a full list of banner exchanges at the Advert Pages site

you get a credit. After you've gained a certain number of credits (usually two), your banner is displayed on someone else's site. Of course, if someone clicks on your banner on someone else's site, they get sent directly to yours. Simple, effective and free, hence its popularity with a large number of new exchanges, including Interlink UK, Link Exchange, 1-2-free Banner Exchange, Bannerswap, Internet Banner Network, Link Trader, and Smartclicks. For a full list of exchanges try **www.advertpages.co.uk /list_ban.htm**.

So why doesn't everyone go for the cheapskate option? Because a lot of the sites on exchanges will belong to the 'here is a picture of my cat' brigade.

+

+

=

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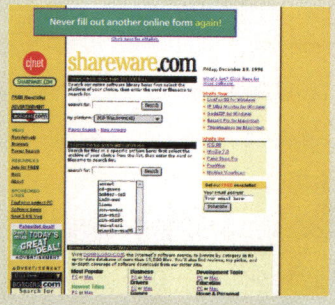
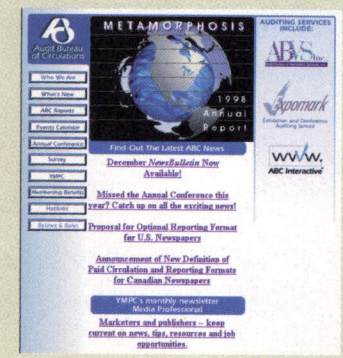
Online resources

DIY
There are any number of banner ad creation tools available as freeware or shareware from **www.shareware.com**, including Banner Show from WebGenie Software and Silicon Joy's Applet Marquee wizard.



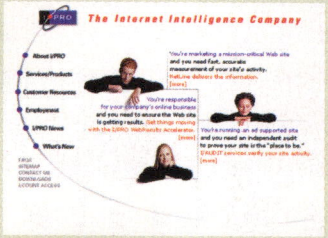
Choosing a host
Subsidiary of ABC that audits/provides verification requirements of advertising-supported Web sites.
www.accessabc.com

I/Audit
Internet marketing information service that collects info on web activity.
www.ipro.com



BPAI Website Audit
Independent third party audit organisation that analyses and verifies traffic data/page requests collected by different Web sites.
www.bpai.com/audits

Accipiter
Powerful, flexible tool to track visitors and their activity.
www.accipiter.com

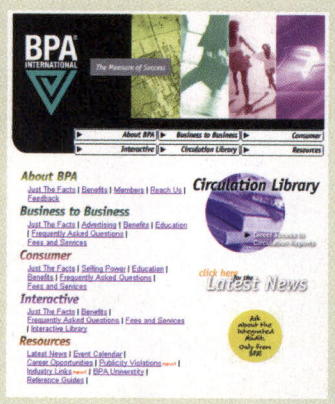


AdCount
Counts pages downloaded by browsers and gives summaries of weekly activity.
www.netcount.com

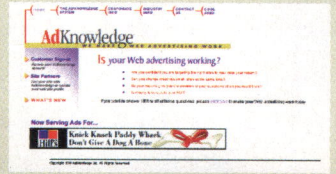
WebTrack
More in-depth than a standard server log, includes an ad spending module to keep track of how much you're spending.
www.webtrack.com

DoubleClick Inc.
www.doubleclick.net

AdKnowledge
AdKnowledge is the only provider of a complete, end-to-end system that automates the web advertising process and gives agencies and advertisers the information they need to maximize the value of their media dollars.
www.adknowledge.com



Netgravity
Netgravity's AdServer lets you manage advertising in an inventory. You can dynamically target ads, measure results in real-time, and automate your sales efforts.
www.netgravity.com



The Internet Advertising Association
A non-profit association devoted to advertising on the Internet.
www.internet-association.org

Internet Advertising Bureau
Info on the effectiveness of advertising on the Internet.
www.iab.net

novel featuring Fabio as the hero. It might be a little hard to stomach for us Brits, but site traffic has jumped from 25,000 to 85,000 visitors a month. (**www.tasteyoulove.com**)

Now, where to put it?
But there's more to just having an attractive banner – placement can make all the difference. There are two basic approaches to ad placement - hardwired, where it stays in a fixed spot on a particular page, and dynamically rotated, where it's delivered to different spots and pages over time. Dynamic rotation will reach more people, but if you're after a precisely targeted audience, hardwiring might more appropriate.

In order to establish your audience, you might want to set cookies to give you a click rate and the number of unique visitors to your site. You'll alo need tracking utilities (otherwise you'll never be able to justify your budget to the money men). There are freeware tracking utilities, such as the SAFE banner wizard (you'll find it at **www.shareware.com**). But if you're looking at a professional campaign, you'll have to dig deep into your pockets and purchase a professional system like ActiveAds (**www.activads.com**). This program will tell you what part of the ad was selected and how long was spent toying with it.

If you're feeling particularly flush, you can always go to third parties like DoubleClick (**www.doubleclick.com**), which will take care of the planning, execution and tracking of your campaign. If it sounds like the cost of your ad is adding up too fast, you should remember the old adage about speculating to accumulate. Alternatively, you could make yourself feel better, and have a laugh in the process, by asking an ad agency how much it costs to advertise during The Bill on television. im

Parlez-vous advertising?

A glossary of those online ad sales terms

Pageview
As it sounds, a request for a specific page

Adview
When your browser requests an ad banner to go with the page. If your browser has cached the ad, or switched off graphics, there won't be an adview.

Click-through
When a user clicks on an ad, it usually takes them straight to the advertiser's site.

Pageview rate
The number of advertising clicks divided by the number of advertising pageviews, by 100 and expressed as a percentage.

Adview rate
The number of advertising clicks divided by the number of adviews, again multiplied by 100 to give you a percentage.

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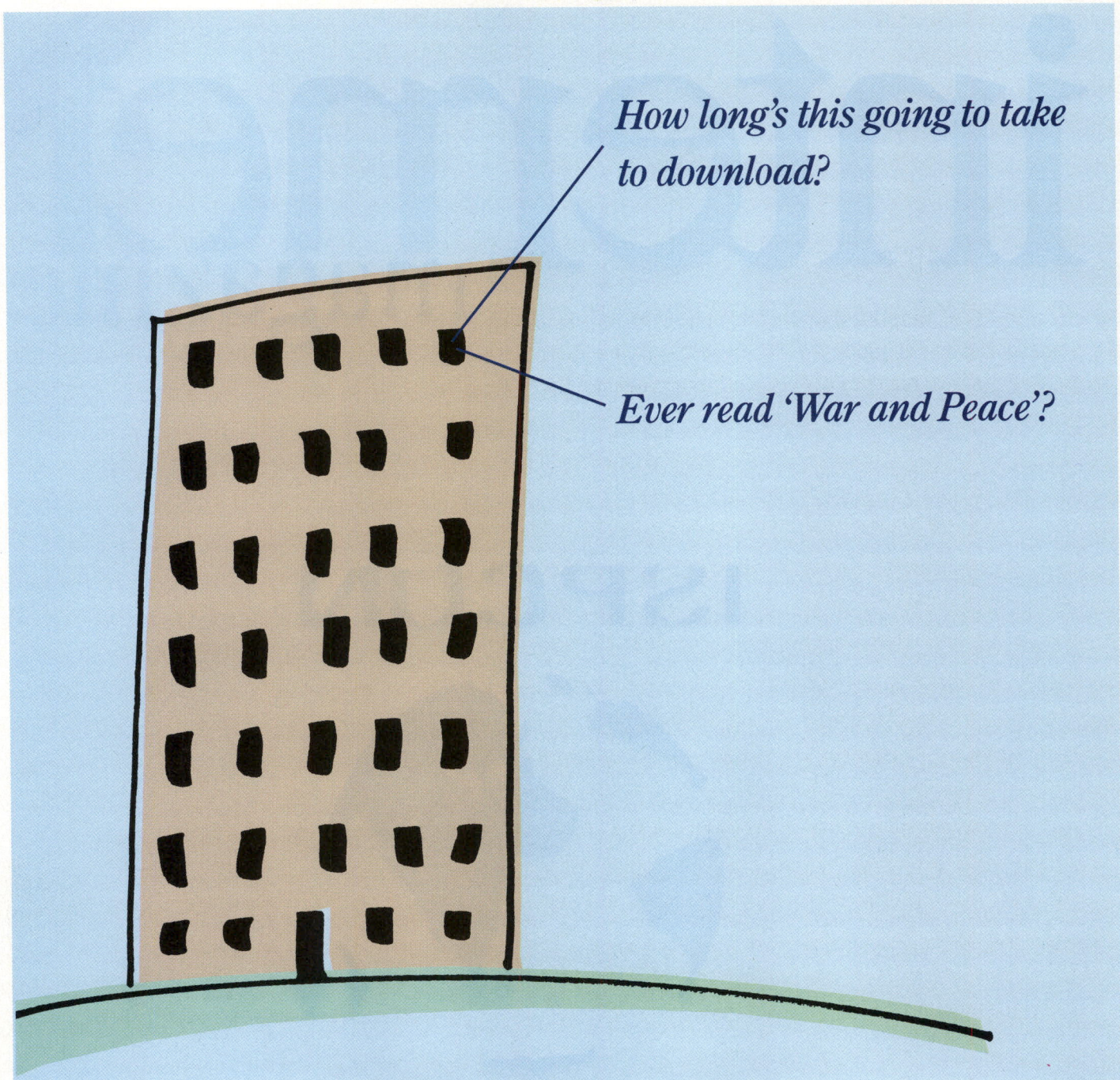

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BT

The state of the UK Internet

BY RICHARD BAGULEY & GAIL ROBINSON

The number of people using the Internet in the UK has more than tripled in the past three years. The industry has had to respond, and a wealth of ISPs have emerged to bring stiff competition to the market. So, how are they coping, and what does the future hold for UK ISPs?

How many ISPs?

In 1994 there were only a handful of ISPs – *Internet Magazine* listed 12. In January 1999 we listed over 300 ISPs, showing how fast the market for providing Internet access has grown during this time. The nature of the market might have changed (particularly over the past year), but it continues to grow, and the number of ISPs continues to increase.

In particular, there's been an increase in the number of virtual ISPs. Reselling Internet access isn't new, but it's only recently that organisations with nothing to do with the Internet (such as the Nationwide Building Society or Tesco) have begun to provide Internet access by reselling the services of companies such as British Telecom or Planet Internet. The model for charging for dial-up access and leased lines has been a flat fee per month, but this is beginning to change with the emergence of free access ISPs.

The telephone system

UK telephone calls are charged on a pay per minute basis, including local calls. This is due to the dominance of British Telecom, which provides more than 80 per cent of all domestic and business telephone lines. A number of smaller telecos (particularly cable TV & telephone companies) attempted to introduce free local calls, but many have withdrawn their offers or introduced rules preventing you from using the free calls to connect to the Net.

But BT hasn't managed to control the market for the ISP phone lines (which make your connection to the Web). These are provided by companies such as Energis (a subsidiary of The National Grid, which distributes electricity through the UK). Energis has used its access to the power distribution system to create its own extensive fibre-optic network. Other companies who provide incoming phone lines include COLT (City of London Telecom at **www.colt.co.uk**) and Scottish Telecom (**www.scotttishtelecom.co.uk**). These companies charge the ISPs a flat fee per month for incoming phone lines (around £30 per line, per quarter for more than 30lines), but the market is now increasingly competitive, so they're negotiating deals which give a share of your telephone call revenue to the ISPs. The line supplier (BT for example) collects the cost of the customer call, but much of this is passed onto the company that terminates the call (eg. Energis). The small percentage that the ISPs receive is referred to as the termination rate, which has become an important bargaining chip in deals between ISPs and telcos.

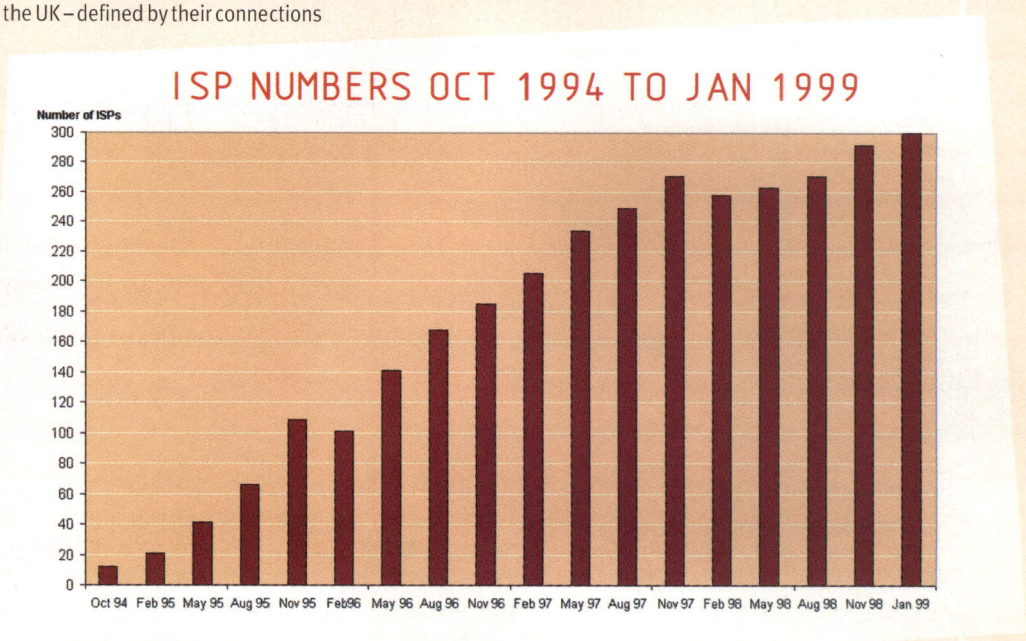
The nature of the UK telephone system means it's very easy for an ISP to get 100 per cent national coverage. All of the companies mentioned so far will provide local call rates at no extra charge to the ISP. This means even a small regional ISP can provide access to users all over the UK. The majority of the telephone network is digital, and most telcos provide ISPs with a digital connection over a fibre-optic line if they purchase more than 10 incoming telephone lines.

Internet infrastructure

There are 25 major backbone providers in the UK – defined by their connections to the London Internet Exchange, the major point for exchanging data in the UK (at **www.linx.net**). Most ISPs buy connections into these backbones rather than buying their own International connections. All of these backbones have connections into one or more of the major US Internet exchanges (many have several for redundancy), and many have a number of connections into Europe.

As previously noted, several companies provide a complete Internet service that can be resold, such as Planet Internet (who were recently acquired by Energis), NTL Internet (**www.ntl.co.uk**) and UUNET (**www.uk.uu.net**). They provide a service that companies can resell without having to make any investment in infrastructure themselves.

There are two major Internet exchanges in the UK – LINX and MaNAP (The Manchester access point at **www.manap.org**). Both are run as non-profit making organisations which charge ISPs and networks for membership. LINX, based in London, requires their members to have their own international connectivity (to avoid members using LINX to get onto



other providers' international connections). MaNAP in Manchester has less rigorous qualifications for membership. Both exchanges have the same aim – to keep UK Web traffic within the UK. Before the founding of LINX, many ISPs were peering at US exchanges, which would have been a ridiculously inefficient way to exchange data.

Major industry players

The major players in the market are either part of large international companies or owned by telcos. Pipex was bought by UUNET, which was bought out by Worldcom. Planet Internet was acquired by Energis, Demon Internet was bought by Scottish Telecom (which also bought Prestel and Scotland Online). Cable & Wireless (at **www.cwcom.com**) bought the Internet component of MCI, and U-Net has been acquired by VIA (which is partly owned by the US ISP Verio).

There are a number of smaller independent ISPs (such as Easynet and Entanet), but the major trend is the bigger the better. Many US companies are rumoured to be planning to buy the remaining independent players, but there don't seem to be many left. Not all of the major players are based in the US. BT continues to have a significant share of the market, while Cable & Wireless has a number of cable TV & telephone companies with a view to expanding its network in order to compete.

Many of the smaller companies have realised they have to stick together to survive, which has lead to the creation of bodies such as the Internet Service Providers Consortium (ISPC at **www.ispc.co.uk**). These 19 smaller ISPs are in a better position collectively when it comes to buying services such as phone lines or backbone connections. Their unity also builds a stronger bargaining position than they would have individually.

Subscriber figures

For dial-up customers, subscriber figures are notoriously difficult to assess, given the different ways in which ISPs calculate their figures. Many include people on free trials or estimates for connections which provide access to multiple users. The situation is confused by the free ISPs which claim to remove you if you don't use your account, so there's still much debate over how their figures should be interpreted.

There's no standard way of producing subscriber figures, but approximate numbers are provided by the *Internet Magazine* marketing hotlist (**www.internet-magazine.com/hot/welcome.htm**) which was last updated in December. This puts AOL at the top, but Freeserve has since claimed the number one position with over 500,000 users. They claim to be signing up over 8,500 new customers a week. Other large players include CompuServe at 400,000, BT at 280,000 (including their various resellers and virtual ISPs) and Demon Internet at 230,000. There are also a large number of providers around the 100,000 mark, including Global Internet, LineOne and UUNET.

Recent changes

The most important change in the Internet industry over the past year has been the launch of free access ISPs, which are charged on a usage basis only. These ISPs (Freeserve at **www.freeserve.co.uk** and Free Online at **www.free-online.net**) charge no more for access than the cost of a normal local telephone call. They can do this because of the small profit they make from the cost of the call which connects you to the Internet (the aforementioned termination rate). These ISPs also charge more for technical support (up to £1 a minute in some cases). Flat fee per month ISPs provide technical support for the cost of a local or national call. A number of free access or low-cost ISPs have been launched in the past year, and this has caused some consternation among the rest of the providers.

Several ISPs have recently added an option for leased line customers – usage-based pricing. UUNET and GX Networks (at **www.gxn.net**), for example, offer connections which can provide extended bandwidth (up to 2Mbits per second) according to your requirements. So you'll have (and be charged for) a slower connection (64 or 128k), but this can upgrade to a bigger connection if required (with the customer paying a premium for the extra bandwidth). This will not replace the conventional, flat fee per month approach. But it's worthwhile if you require occasional high bandwidth connections but you don't want to pay the price for a full-time high bandwidth connection.

Encryption and electronic commerce

The UK Government has had a few problems getting to grips with encryption. Earlier this year, the encryption statement on the Labour party Web site mysteriously disappeared. But a framework for the new e-commerce bill is at last taking shape. It's likely to involve trusted third parties, which are licensed to offer cryptography services. Licensing will be voluntary, but digital signatures without a licence could be challenged in court.

Education, the Internet and the Government

One of the new Labour Government's key promises was to help get schools online. Tony Blair has pledged to get every school online by 2002 – but whether this means that every school will have a leased line connection or that every school will have one dial-up account was never made clear. The Government has also set up the National Grid for Learning (NGFL). The body has been given £100 million to connect 32,000 schools. Part of the plan is a Web site designed to bring together educational material on the Net – creating a huge educational portal.

Progress on the NGFL has been slow. Recent research suggests that 43 per cent of British schools are connected to the Net, but less than a third of these provide Internet access to students. It's a public/private partnership and the likes of British Telecom, Research Machines, Excite and AOL are heavily involved. Excite has offered all British schoolchildren free email accounts through its ExcitePost service. AOL is offering free Internet accounts to schools registered with UK Netyear – the Government's initiative which was introduced last year (visit the Web site for more information). These are some of the few tangible benefits we've seen from the Government's commitment to give Internet access to every schoolchild in the UK.

www.uknetyear.org
www.ngfl.gov.uk
www.excitepost.co.uk

THE PRICE OF A LEASED LINE

Despite severe competition, leased lines have traditionally been more expensive in the UK than in the US. You can expect to pay between £40-50,000 a year for a 1Mb leased line suitable for reselling (prices for non-reseller lines are usually lower at £35-40,000), but you still have to pay for the physical connection between you and the Backbone provider. This usually costs an extra £5-7000 within central London, but can cost a lot more depending on your proximity to the backbone providers' POP (point of presence), and whether the connection will require additional cable installation. Other Telcos are moving in on this lucrative area, but BT still provides most of the connections, especially outside of the London area.

Most backbone providers run their leased line customers into either their NOC or Telehouse – a secure telecoms facility in London's Docklands, although some of the larger providers have regional NOCs or POPs to minimise the distance between their network and a potential customer.

An insider's view of the industry

The Major Players

The Internet industry has been remarkably successful at protecting its interests in the UK. A barrage of ISP-backed interest groups have appeared over the last five years. Most set out to protect the interests of the industry and to convince the government that the UK Net community can be self-regulated. But the government has been considering the introduction of new laws, particularly ones to cover e-commerce and encryption.

The Internet Watch Foundation

The Internet Watch Foundation (IWF at **www.iwf.org.uk**) attempts to deal with the problem of illegal material on the Net, especially child pornography. The organisation is now funded by UK ISPs and was set up in September 1996 by the founder of the ISP Pipex, Peter Dawe. The IWF has received criticism for dealing with only a fraction of the illegal material on the Net. In its first year of operation, the IWF dealt with a relatively small 781 reports from the public and took action on 2,000 items – most of them child pornography.

The critics are worried about the IWF's importance when it comes to influencing public policy, especially in the area of developing rating and filtering systems. The Department of Trade and Industry (DTI) is assessing how well the IWF has dealt with the problem of online pornography. You can put forward your comments on the Web site at **www.kpmgiwf.org**. Contact David Kerr at **chief@iwf.org.uk**.

The Internet Service Providers Association

Like the IWF, the Internet Service Providers Association is funded by UK service providers. The ISPA was set up in 1995 to promote the public image of the Net and to minimise government interference with the Internet industry. Over 80 companies involved in providing Internet services are members of the ISPA, covering around 90 per cent of the UK dial-up market.

The ISPA code of conduct requires ISPs to remain within the law, to ensure services do not incite violence, sadism, racial hatred or prostitution. The ISPA has been in the news recently, as cyber liberties groups allege they're working with police to view email going through member's systems. The truth is less sinister – representatives of ISPs and the police were deciding how the police will access information held by ISPs. You can email David Kennedy at **chief@ispa.org.uk**

www.ispa.org.uk

The London Internet Exchange

The London Internet Exchange (LINX) is an influential non-profit making body which handles over 98 per cent of UK Internet traffic. It now has 44 ISP members from seven countries, making it the largest Internet Exchange Point in Europe. The LINX has the power to make organisational and technical demands on its members. It also makes a substantial contribution to the funding of the IWF, in return for seats on the management board.

www.linx.net

The Foundation for Information Policy Research

This group was formed in May 1998 and attempts to bridge the gap between the UK's Internet and computing industry and the government. Funding for the Foundation comes from Microsoft and a batch of UK ISPs, including Demon and Poptel. It's hoped they will bring together the needs of government officials, technical and business people and academics. Items on the Foundation's agenda include data protection and privacy, copyright, law enforcement, electronic commerce and encryption.

www.fipr.org

On the edge

Yaman Akdeniz is the founder of Cyber-Rights and Cyber Liberties UK, a body set up to promote free speech and privacy on the Internet. "The question is not whether access to encryption keys is wrong, but whether it's safe to entrust all future governments with an unprecedented capability for mass surveillance," says Akdeniz.

www.leeds.ac.uk/law/pgs/yaman/yaman.htm

The campaign for Internet Freedom fights against censorship and regulation of the Net. The driving force behind the organisation is Chris Ellison: "Adults are quite capable of coping with material they find distasteful and parents are quite capable of dealing with what their children see".

www.netfreedom.org

FACTS AND FIGURES ON UK NET USERS

What are the big concerns of home UK Net users?
Recent research by Inteco suggests that most respondents believe their ISP subscription fee is good value for money. Respondents noted that the escalating phone bill which comes from increased usage is a major problem and their primary concern. Online providers AOL and CompuServe now account for 48 per cent of the ISP market in the UK. Research conducted by Ziff-Davis and Dell Computers suggests there has been a sharp rise in the number of people going online in UK over the last six months – 40 per cent of whom are women.

How many people in the UK have used the Net?
Research carried out by MORI suggests over eight million people in the UK have used the Internet. The stereotypical Net user is a male 35 year old. He is financially secure and lives in a house without children. BRMB International's research reveals that 42 per cent of people access the Web from home, while 38 per cent go online from the workplace.

Has the UK embraced the Net?
Research from Which? (the online component of the Consumers Association) says people in the UK accept the Internet is here to say, but they're not happy about it – 58 per cent believed the Net was a threat to our morality. Seventy two per cent of respondents believe the Net should be regulated and just under 50 per cent think the Net encourages fraud.

What about UK businesses and the Net?
Durlacher Research reports that 83 per cent of UK companies in manufacturing, distribution and retail believe e-commerce will become crucial, but only 21 per cent have an e-commerce strategy. Durlacher says 54 per cent of medium-sized companies and 33 per cent of small companies are online. Thirty five per cent of small and medium-sized businesses expect to be involved in e-commerce in the next six months.

www.durlacher.co.uk
www.inteco.com
www.nua.ie

ISPCON LONDON '99 an introduction

BY MICHOL SULLIVAN FROM MECKLERMEDIA

Reflecting the changes in the Internet industry and the ISP market, ISPCON London '99 has designed a three-day forum for ISPs and their suppliers. Make sure it's in your diary...

This will undoubtedly be a decisive year for the European ISP marketplace. Given the recent stampede by telcos, free ISPs and consumer giants like Tesco, 1999 is sure to reveal, or at least indicate, a prototype ISP. For the conventional flat fee per month provider, the recent interest in providing Internet access and content has brought more customers to the industry, and ISPs have had to adapt and grow in accordance with the changing environment.

In anticipation of these changes, Mecklermedia has launched ISPCON '99. ISPCON is the longest standing dedicated industry forum for Internet Service Providers. It was established in North America in 1996 and now attracts over 2,500 delegates. Exclusively endorsed by both the UK ISPA and Euro ISPA, ISPCON London '99 is designed to be a one-stop shop for ISPs and their suppliers. We've designed a three-day forum that includes more than 70 technical and business solution sessions, covering topics such as maximising bandwidth, network management and security, e-commerce, and value-added services. We also offer business tracks, which cover regulatory and legal issues, finance and investment, and winning marketing strategies for ISPs.

Ford Focus giveaway

ISPCON London '99 features an exhibition which was developed alongside the conference. It will provide a commercial arena where companies can demonstrate their latest products and services for their business partners and prospects. We'll also be giving away two Ford Focus cars to add an element of suspense and fun for our participants. Registered delegates will get a passport stamped by the sponsoring companies and then enter into the raffle.

On the second evening of the event, Mecklermedia has teamed up with the endorsing associations, ISPA UK and Euro ISPA, to co-host the annual ISPA Internet Industry Awards Ceremony. This black tie dinner gala will be held on 24 February 1999 at the prestigious Café Royal. The ISPA Internet Industry Awards Ceremony is the first of its kind to be certified and hosted by the industry association that represents the interests of the ISP market. It will become an industry standard for recognising and rewarding the success of ISPs within the UK and Europe. What's more, you can pay to attend both the ISPCON London '99 conference and exhibition, and the ISPA Internet Industry Awards Ceremony.

We've designed a convention that comprises all of the elements that are needed to create a comprehensive and worthwhile experience. We've kept the entry fees at a level which yields a quality turnout, without being prohibitive. Your full registration fee affords you access to more than 70 sessions, an exhibition, an ISPCON reception, two car raffles and a black tie awards ceremony – for the unbeatable price of under £500.

A must attend event

If ISPCON London '99 isn't already in your diary, we urge you to enter it as a must attend event. We hope to retain your business every year, as we work to perfect and expand this event in accordance with your changing business needs and objectives, and the changing ISP environment.

For details on how to obtain an ISPCON London '99 brochure, please phone +44 (0)1203 426 428. To register, please use the faxback form on the following page, or phone us directly on +44 (0)171 976 0405. To register online, please visit our Web site (**www.uk.internet.com**) and enter '44' when you are asked for the two-digit code prompt.

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2. AREA OF BUSINESS
(please tick one box only)
01 ☐ Internet Service Provider
02 ☐ Reseller/ VAR
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10 ☐ Other (please specify)

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(please tick all boxes that apply)
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02 ☐ Development
03 ☐ Purchasing
04 ☐ Design/ implementation of applications
05 ☐ Design/ implementation of IP Networks
06 ☐ Primary contact for connection failure
07 ☐ Responsible for maintaining connection/ web presence
08 ☐ Not relevant for me

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(please tick all boxes that apply)
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02 ☐ Recommending
03 ☐ Determining needs
04 ☐ Authorise purchase
05 ☐ Make purchase
06 ☐ None

5. INVOLVEMENT IN PURCHASING DECISION AS CONSULTANT/ INTEGRATOR FOR CUSTOMER
(please tick all boxes that apply)
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02 ☐ Specifying brands
03 ☐ Determine brands
04 ☐ Make purchase
05 ☐ Stock products for resale
06 ☐ Not relevant for me

6. SIZE OF COMPANY
(please tick only one)
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02 ☐ 11-50
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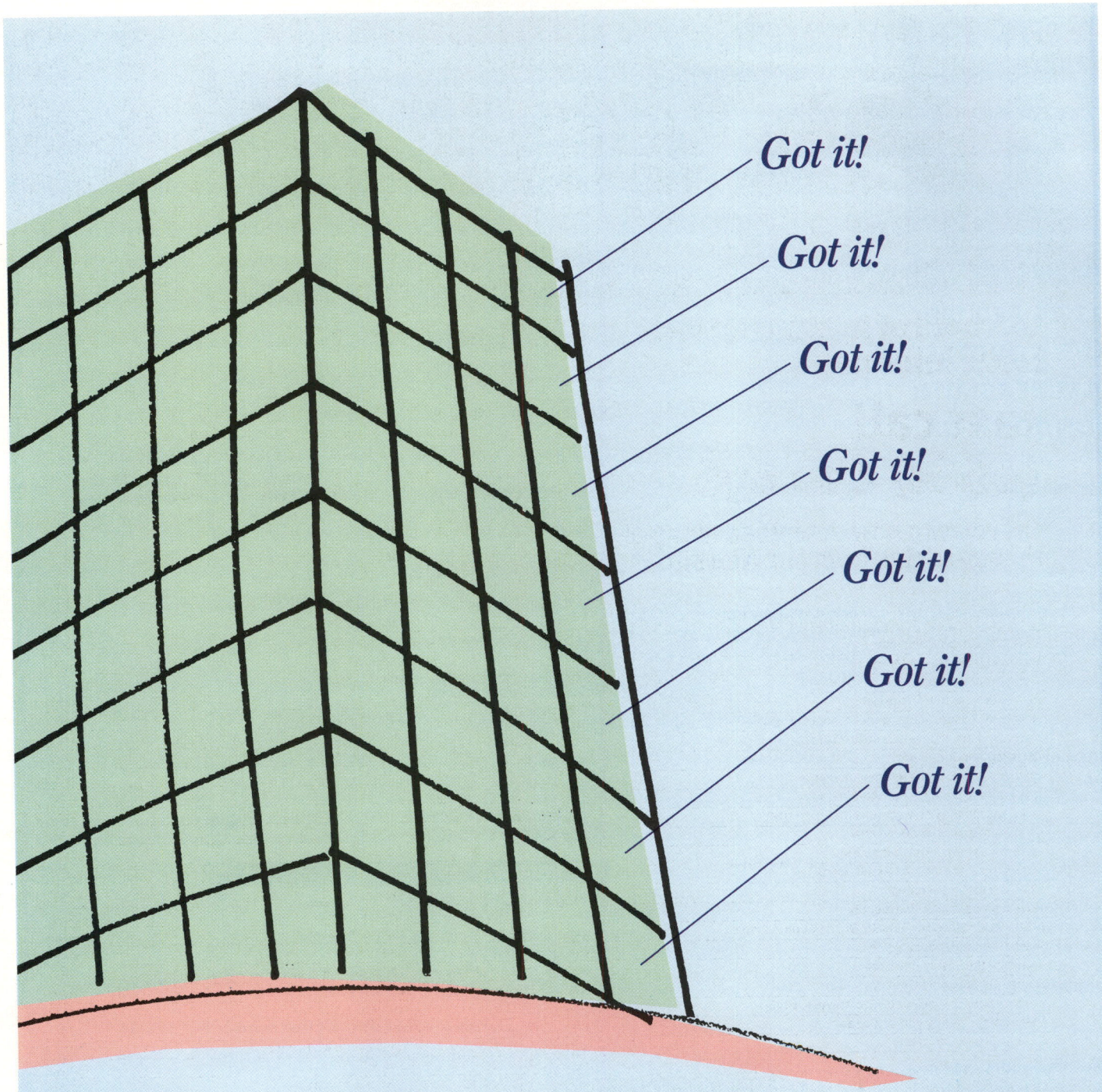

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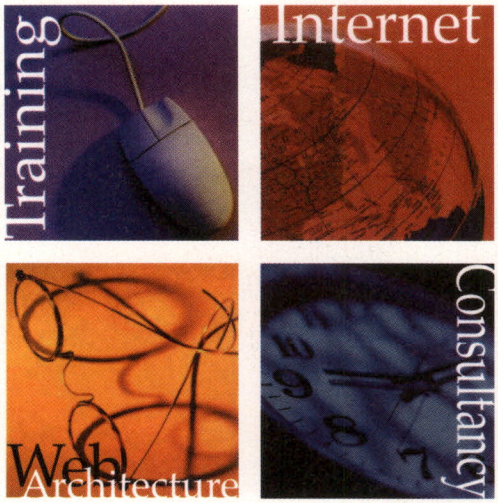

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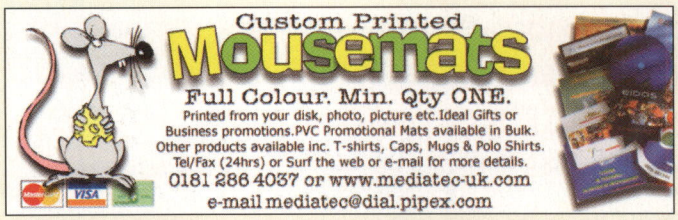

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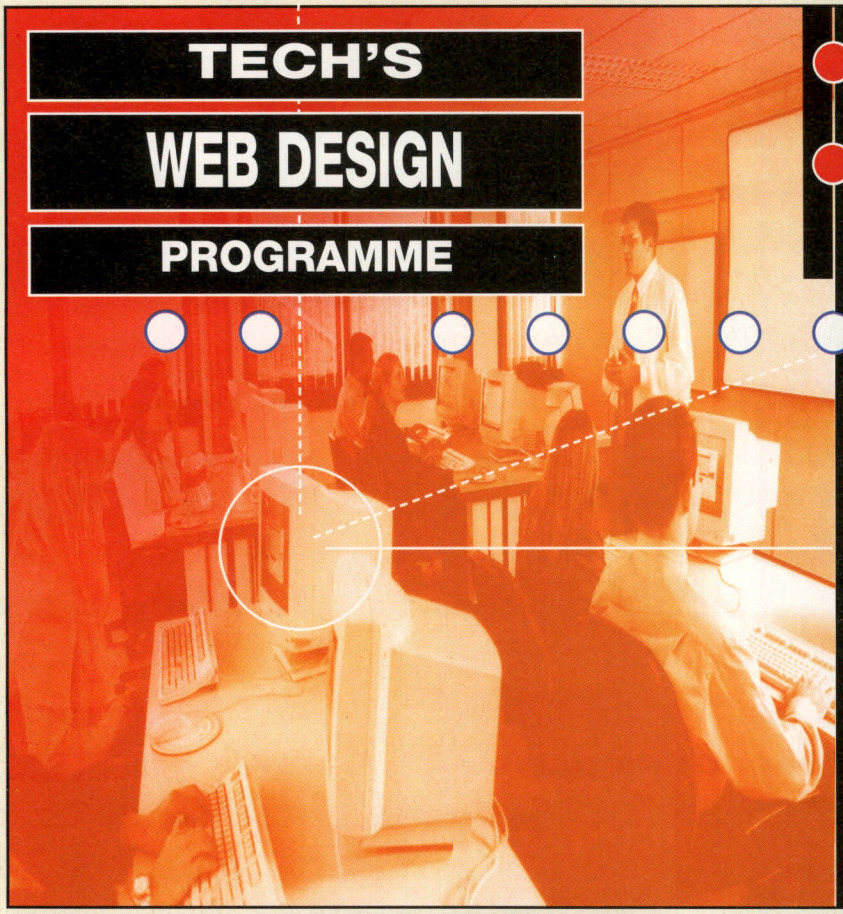

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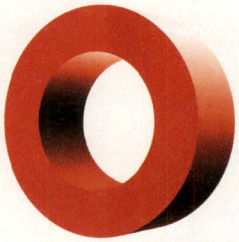
Choosing an ISP is a tricky business, but one of the few areas of differentiation is performance. To help you choose, *Internet Magazine* tests the performance of over 100 service providers every month. We check out their availability by tracking the busy tones we get when we try to connect. Once connected, we test out Web speeds by timing how quickly we can download a number of Web pages.

Our tests run continuously over a period of around three weeks every month. This means we get a good indication of each ISP's performance over the test period. As well as our monthly tests, we produce another set of ratings – the six-month tests. These are generated from the previous six months of data, and give a good indication of an ISP's performance over a longer period (see page 150).

This month's winner

This month's winner is UUNET. Although its availability was slightly below other ISPs, its Web speed was good enough to merit the top spot. UUNET's results have been varying wildly, including a poor 92nd last month. But its problems seem to be behind them, with an overall performance strong enough to win UUNet the coveted ISP of the month award.



UUNET

As usual, there's plenty of competition for the top spot, with challenges from Technocom and last month's winner, Entanet. Cable Internet also makes a strong comeback, with a strong performance in both availability and Web speed.

Poor results for Virgin

It's a slightly less cheery situation for Virgin and NTL – both have fallen into the doldrums this month. This combined fall isn't surprising since NTL supplies all the infrastructure for Virgin Net.

Free ISPs slip down the charts

Many of the free ISPs that were added to tests last month seem to be slipping . Freeserve has dropped to 54th, while Free-Online has fallen to 79th. Cable & Wireless Internet Lite dropped to 46th place, with BT Click suffering a less dramatic fall of nine places to 29th. All had availability ratings of below average or average Web speeds. Maybe they're victims of their own success – with Freeserve now claiming over 700,000 subscribers (far exceeding its own predictions), it could be getting overwhelmed. It's still early days for these new ISPs, and we'll be keeping a close eye on how they do over the next few months.

The averages

This month's average availability for all the ISPs tested was 95.87 per cent, slightly up on last month's 94.45 per cent. The average Web speed was 18.7 seconds, with the regional averages being 10.83 seconds for the UK, 21.25 for the US and 24.14 seconds for the Europe.

Problems with testing

Wavenet is no longer featured in our tests, since it's been bought out by U-Net. We had problems testing the ISP Wave Rider (which has scored highly in previous months' tests) this month – there was a compatibility problem between our test software and Wave Rider's cacheing system. We are working on getting them back into the tests as soon as possible.

Uppers & downers

▲ **UUNET**
Up 90 places to take top spot
After a poor few months, UUNet climbs back up to the top

▲ **Cable Internet**
Up 103 places to fourth
Cable Internet comes back from last month's poor performance

▲ **Poptel**
Up 104 to 11th
Poptel storms our charts

▼ **Emnet**
Down 63 to 93rd place
It's been a disappointing month

▼ **Virgin**
Down 100 to 107th
Perfect availability but poor Web speed lets Mr Branson down

▼ **NTL Internet**
Down 72 to 109th
And it's the same story for NTL

Testing procedure

Our testing machines hold a list of ISPs to test. The system selects four Web sites at random from a list of 20, and tests the download speed for each ISP in turn. When it gets to the end of the list, it picks four more sites and starts again.

We calculate an average download time for each Web page, giving regional averages for each ISP. These are used to produce an overall average Web download time – which gives us the final ranking.

Since most Web traffic is still to and from sites in the US, we weight each of the regional averages – US sites get 60 per cent, UK sites 30 per cent and European sites 10 per cent.

The only ISP tests that count

The *Internet Magazine* ISP tests are based on proven scientific testing principles. We make sure we connect to each ISP many times – which means we make thousands of calls.

The results produced by this extensive testing are then processed, resulting in the test analysis and ranking figures you see in these pages. At every stage, the results are checked to make sure they are accurate.

Please remember that these tests are only designed to examine the availability and speed of an ISP – we don't test their prices or technical support. For the lowdown on the complete set of services provided by the top 30 ISPs, get hold of our gigantic ISP of the Year feature from our Faxback service on page 133.

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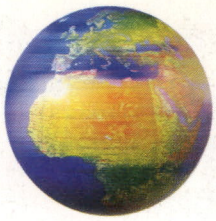
b tests



This month's best-performing ISPs, as tested in *Internet Magazine*'s labs

This Month	Last Month	Provider	Telephone	Availability (%age)	Overall average Web speed (seconds)	Average (seconds) UK Web sites	Average (seconds) US Web sites	Average (seconds) European sites
1	92	UUNet (Pipex Dial)	(0500) 567 000	97.30%	13.23	8.82	14.19	17.44
2	4	Technocom	(01753) 714 200	94.74%	13.00	9.72	13.70	16.18
3	1	Entanet	(0500) 368 263	100.00%	14.19	9.45	15.64	17.66
4	107	Cable Internet	(0500) 500 100	98.63%	13.82	9.43	14.62	18.42
5	2	Interactive Web	(01926) 450 099	100.00%	13.66	9.55	13.51	20.21
6	5	UniNet Internet Services	(0800) 783 7499	100.00%	13.76	8.53	14.14	20.62
7	1	AIC-ENTANET	(01279) 306677	100.00%	14.37	11.32	14.96	17.46
8	12	NewNet	(07000) 639 638	100.00%	14.54	8.97	16.22	18.70
9	36	Primex	(01908) 643 597	94.74%	13.97	8.52	15.34	18.72
10	29	REDNET	(01494) 511 640	94.74%	14.19	9.29	15.78	17.58
11	115	Poptel	(0171) 923 9465	87.90%	12.90	8.18	13.57	18.29
12	68	Global Internet	(0870) 909 8041	100.00%	14.87	8.86	16.16	20.65
13	83	Moonlight Internet Services	(01276) 856 868	98.21%	15.07	9.55	17.15	18.17
14	14	Pinnacle Internet	(01293) 613 686	96.00%	14.07	9.15	14.58	20.17
15	23	Portland communications	(0181) 942 1115	100.00%	16.14	9.46	20.07	16.32
16	52	Intonet	(0181) 941 9195	93.42%	14.32	9.57	15.96	17.35
17	8	CableNet	(01424) 830 900	100.00%	15.06	9.28	16.49	20.16
18	88	Internet Central	(01270) 611 000	94.74%	14.62	9.62	16.35	17.82
19	48	TriNET	(01539) 731 000	98.25%	15.41	9.18	17.95	18.40
20	57	Total Connectivity Providers	(01703) 571 300	100.00%	15.14	9.74	16.07	20.91
21	38	Intensive Networks Ltd	(01672) 511 054	98.21%	15.09	9.02	16.67	20.23
22	32	Netkonect	(0171) 345 7777	98.63%	16.05	8.65	19.86	17.64
23	55	SAQ Network Services	(0800) 358 9000	100.00%	15.87	9.62	18.42	18.87
24	49	Ideal Internet services	(01942) 522 333	96.00%	14.86	9.37	16.37	19.32
25	86	Nildram	(0800) 072 0460	96.55%	14.99	8.94	16.65	19.92
26	64	FirstNet	0113) 294 4224	98.18%	16.38	9.30	20.44	16.86
27	15	Gifford Internet Services	(0117) 939 7722	94.74%	15.12	9.70	17.06	18.39
28	33	Gemsoft	(0114) 275 7070	100.00%	15.96	8.91	18.18	20.98
29	20	BT Click	(0800) 783 9999	93.22%	14.60	8.87	15.70	20.44
30	97	The Internet Business	(01232) 424 190	100.00%	16.05	10.60	17.76	19.93
31	16	PowerNet	(01908) 605 188	98.21%	15.71	9.08	17.71	20.69
32	17	Mitsubishi	(0800) 226 600	94.74%	14.92	9.44	15.91	20.67
33	28	CompuServe	(0990) 000 200	100.00%	15.59	10.18	16.15	22.33
34	44	Freedom To Surf Plc	(0181) 881 2111	93.51%	15.54	11.84	17.15	17.07
35		Madhouse Net	(0800) 074 8283	98.21%	16.14	10.90	17.80	19.84
36	67	ClaraNet	(0800) 358 2828	93.22%	15.47	9.50	17.62	19.06
37	22	Prestel Online	(0990) 223 300	97.30%	15.60	10.45	16.33	21.52
38	3	1st Solution	(01256) 382 720	97.23%	16.06	10.65	17.78	19.85
39	18	Direct Connection	(0800) 072 0000	93.22%	14.87	8.90	15.62	21.92
40	76	Thrust World	(0171) 544 7425	98.94%	16.78	10.51	19.26	19.98
41	46	Frontier Internet Services	(0171) 536 9090	98.63%	16.87	10.04	19.53	20.47
42	50	Datanet	(01252) 810 081	100.00%	18.50	9.34	24.50	17.23
43	89	Andover On-Line	(01264) 334 822	100.00%	16.90	10.77	18.50	22.11
44	53	Internet for Business	(01224) 333 370	94.92%	15.59	9.48	16.27	23.07
45	93	Force 9	(0800) 073 7800	87.80%	15.70	10.17	18.75	16.37
46	25	Internet Lite	(0800) 092 9001	93.22%	17.30	9.26	22.34	16.73
47	69	Wyenet Internet services	(01989) 762 476	100.00%	17.22	11.72	18.91	21.25
48	84	ProWeb	(0500) 636 343	93.22%	15.78	9.79	16.97	21.80
49	59	I-Way	(0171) 734 5734	97.30%	16.88	10.03	19.03	21.80
50	11	Newbury Internet	(01635) 569 123	98.11%	16.76	9.92	18.29	23.18
51	66	Internet Discovery	(01203) 364 400	97.30%	17.95	10.70	21.97	18.74
52	6	LondonWeb Communications	(0800) 026 8306	98.25%	17.47	8.84	20.58	22.63
53	27	DNA Internet Services	(01604) 670 717	91.67%	15.63	11.16	15.71	22.15
54	21	Freeserve	(0990) 500 049	92.31%	17.27	10.52	21.05	17.95
55	45	Power Internet	(0500) 011501	94.74%	16.78	11.26	18.12	21.71
56	40	Inter@lpha	(01703) 363 200	100.00%	17.73	9.20	20.02	24.79
57	103	Pavilion Internet	(01273) 607 072	100.00%	17.83	9.31	20.30	24.44

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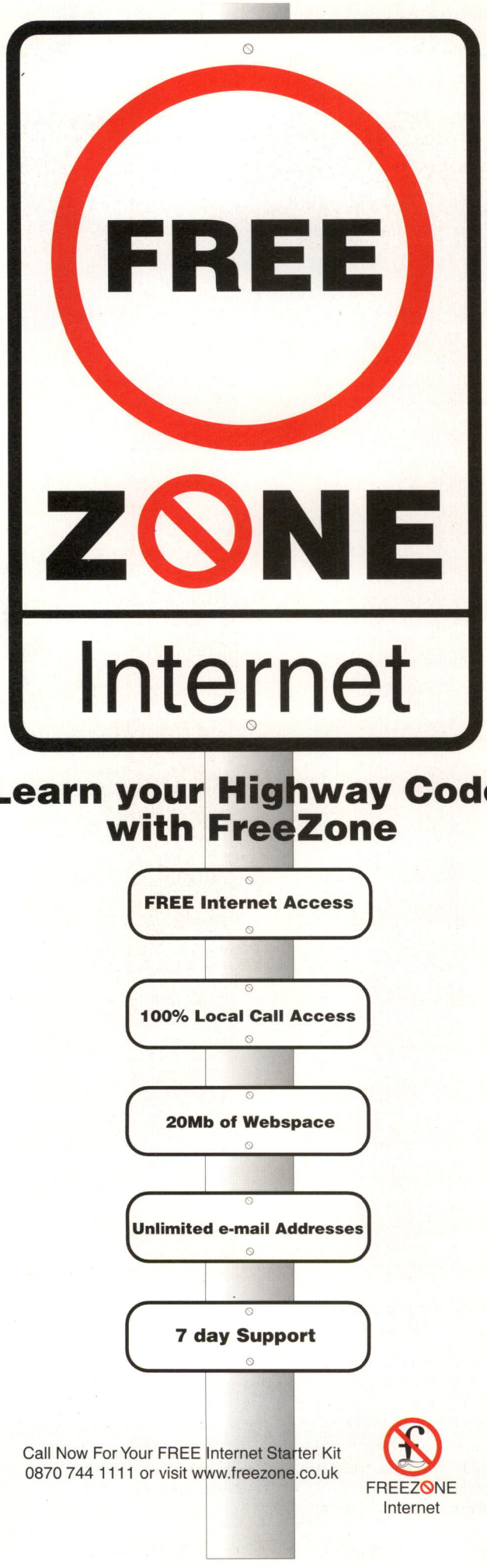

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This month's best-performing ISPs, as tested in *Internet Magazine*'s labs

This Month	Last Month	Provider	Telephone	Availability (%age)	Overall average Web speed (seconds)	Average (seconds) UK Web sites	Average (seconds) US Web sites	Average (seconds) European sites
58	99	Easynet	(0171) 681 4444	100.00%	18.49	11.27	21.73	21.23
59	80	BT Internet	(0800) 800 001	100.00%	17.46	11.73	18.12	24.40
60	87	Mistral Internet	(01273) 747 432	96.00%	16.88	9.42	18.34	24.40
61	N/A	Avel Internet	(01237) 425100	92.00%	16.68	9.31	18.86	22.28
62	118	Enterprise	(01624) 677 666	92.21%	17.12	11.55	19.43	19.73
63	100	Cheapnet	(0990) 168 160	98.21%	18.44	11.12	21.65	21.38
64	58	Sonnet Internet	(0171) 891 2000	100.00%	18.74	9.27	22.49	23.55
65	78	Vossnet	(01753) 737 800	97.30%	17.41	10.74	18.56	24.55
66	47	SoftProg NET	(0181) 788 0656	97.30%	18.27	11.04	21.31	21.54
67	34	CIX	(0181) 255 5151	100.00%	16.71	10.24	15.29	29.97
68	95	Aviators Network	(01727) 868 468	88.89%	16.78	10.03	19.44	20.28
69	56	DIALNet	(0800) 881 881	92.98%	17.01	9.96	18.62	23.54
70	54	UK2Net	(0171) 538 0253	100.00%	19.05	11.43	21.93	23.28
71	72	CommUnity Internet	(01865) 856 000	100.00%	18.05	12.23	18.21	26.40
72	91	Net Matters	(0345) 573 377	94.56%	18.43	11.22	21.60	21.32
73	35	AngliaNet	(01473) 211 922	94.67%	17.97	11.56	19.73	23.19
74	61	FreeDotNet	(0181) 938 3338	98.21%	17.98	13.51	17.73	25.30
75	110	ConnectFREE	(0702) 1152525	97.26%	18.63	10.34	21.27	24.48
76	19	CYBERphile Internet	(01543) 454 840	93.51%	17.18	8.82	18.01	27.62
77	63	WSS Internet Access	(01793) 420 764	96.55%	19.21	12.70	21.51	23.24
78	105	Cygnet Internet Services	(0181) 880 4650	89.06%	17.57	10.57	19.66	22.86
79	31	Free-Online	(0870) 7060504	87.50%	17.67	10.70	20.26	21.67
80	71	Legend Internet	(01274) 743 500	91.14%	18.90	8.94	23.21	23.07
81	N/A	ICM Netserv	(0800) 614 581	95.24%	19.76	9.95	24.04	23.76
82	106	TIA NET	(0800) 092 6070	92.31%	17.90	11.65	18.09	26.79
83	96	EntWeb	(0800) 525 470	96.00%	19.65	12.76	21.50	25.35
84	113	Onyx Internet	(0345) 715 715	77.27%	15.79	9.60	17.41	21.03
85	117	Demon Internet	(0181) 371 1234	91.03%	18.95	8.83	22.46	25.36
86	65	NetDirect Internet	(0800) 731 3311	92.31%	18.65	9.47	20.61	27.51
87	82	LineOne	(0345) 777 464	98.63%	20.52	13.02	22.54	26.72
88	79	Telinco Internet Services	(0800) 542 0800	94.83%	20.73	10.45	24.73	26.14
89	74	Thames Global Internet services	(01344) 641 627	98.63%	20.36	11.74	21.30	30.93
90	102	UK Online	(01749) 333 333	93.22%	20.15	9.84	23.39	27.50
91	51	Baynet Internet	(01222) 256 401	97.26%	20.21	12.01	19.86	33.38
92	62	Abel Internet	(0131) 445 5555	90.91%	19.88	16.43	19.79	25.26
93	30	Emnet	(0115) 956 8260	100.00%	19.80	11.26	17.14	39.25
94	98	Success In Motion Internet Services	(0800) 0745 547	93.22%	21.80	10.42	27.03	25.79
95	90	WebLeicester	(0116) 223 0070	96.55%	25.02	9.34	36.53	19.77
96	N/A	Eclipse Networking	01392 202 345	86.96%	21.23	11.22	27.27	21.16
97	109	U-Net	(01925) 484 444	93.42%	25.23	9.20	38.16	16.95
98	94	Metronet	(0800) 074 1881	77.61%	18.95	11.43	23.36	19.17
99	75	Direct Net @ccess	(01232) 201 555	98.63%	22.57	10.79	24.92	34.35
100	70	HiWay	(01635) 573 300	88.89%	23.44	8.86	33.10	21.19
101	108	Zoo Internet	(0181) 961 7000	87.50%	21.54	13.18	25.44	24.37
102	43	Cyber ware	(01733) 765 005	94.92%	28.27	8.58	45.65	14.33
103	39	Internet Alliance eXchange	(0800) 052 0523	100.00%	21.26	9.16	19.60	43.56
104	73	Netcom Internet	(0800) 980 9107	91.53%	22.03	9.60	25.05	33.15
105	77	Cerbernet	(0171) 360 8000	100.00%	29.70	10.35	44.09	22.76
106	9	inweb	(01344) 842 979	100.00%	28.57	10.85	39.39	28.09
107	7	Virgin Net	(0500) 558 800	100.00%	25.10	11.65	24.22	47.46
108	111	WorldWide Web Services	(01784) 898 800	100.00%	33.58	10.15	51.04	25.08
109	37	NTL Internet	(0800) 607 608	98.21%	25.27	9.10	24.24	52.11
110	85	Cable & Wireless	(0800) 092 9001	90.32%	32.98	9.80	52.89	17.98
111	104	Newgate Communications	(0121) 327 6633	86.59%	24.25	10.50	24.15	45.11
112	114	Northants Computer Centre	(01604) 622539	100.00%	31.90	22.05	35.89	36.60
113	10	Which? Online	(0645) 830 240	98.21%	27.58	9.69	25.67	59.18
114	119	INTERact	(01753) 776 699	100.00%	32.48	45.30	26.99	26.95
115	60	Computalynx	(01604) 231 437	98.18%	26.30	10.40	19.14	68.06
116	116	Surflink	(0181) 903 2777	94.83%	34.91	25.45	37.24	43.27
117	112	Paradise Internet Network Services	(01256) 414 863	100.00%	34.74	22.96	33.20	56.28

How the performance tests work

The *Internet Magazine* provider lab tests are designed to give you all the information you need on the speed and availability of Internet Service Providers. Every month, our testing system accesses each of the ISPs on the list many times. Our system repeatedly checks:

- The availability of the ISPs. How easy is it to make the connection? How often are all of their modems engaged?
- The speed of the connection. How long do a number of popular Web pages take to download?

We're now testing access speeds to 20 popular Web pages situated around the world. We only print the summary results in these pages, but you can see the full details of the tests (including the results for each of the individual pages) on our Web site at **www.internet-magazine.com/isp/tests**

To rank the ISPs, we calculate the geometric mean of the availability and their average Web performance. This figure is then used to place the ISPs in order of overall performance. These two results are given equal weighting, so a provider with a below average availability but an above average Web speed could come higher in the rankings than one with 100 per cent availability but slower Web access speeds.

- The tests for this month ran over the period 4-20 December 1998.

How the ISPs performed over the past six months

Find out how your service provider has done in our unique chart...

	Provider	Phone	URL
1	Technocom	(01753) 714 200	www.technocom.net
2	REDNET	(01494) 511 640	www.red.net
3	Primex	(01908) 643 597	www.primex.co.uk
4	Netkonect	(0171) 345 7777	www.netkonect.co.uk
5	CYBERphile Internet	(01543) 454 840	www.cyberphile.co.uk
6	Freedom to Surf	(0181) 881 2111	www.freedom2surf.net
7	Nildram	(0800) 072 0460	www.nildram.net
8	Power Internet	(01908) 605 188	www.powernet.co.uk
9	Pinnacle Internet	(01293) 613 686	www.pncl.co.uk
10	CompuServe	(0990) 000 200	www.compuserve.co.uk
11	Sonnet Internet	(0171) 891 2000	www.sonnet.co.uk
12	SAQ Network Services	(0800) 358 9000	www.saqnet.co.uk
13	ProWeb	(0500) 636 343	www.proweb.co.uk
14	Gemsoft	(0114) 275 7070	www.gemsoft.net
15	ENTANET	(0500) 368 263	www.enta.net
16	CIX	(0181) 255 5151	www.cix.co.uk
17	Cable Internet	(0500) 500 100	www.cableinet.co.uk
18	NetDirect Internet	(0800) 731 3311	www.netdirect.net.uk
19	Direct Connection	(0800) 072 0000	www.dircon.net
20	London Web Communications	(0800) 026 8306	www.londonweb.net
21	Internet Central	(01270) 611 000	www.netcentral.co.uk
22	ClaraNET	(0800) 358 2828	www.clara.net
23	InterNet for Business	(01224) 333 370	www.ifb.net
24	CableNet	(01424) 830 900	www.cablenet.net
25	Intensive Networks	(01672) 511 054	www.intensive.net
26	Legend Internet	(01274) 743 500	www.legend.co.uk
27	TriNET	(01539) 731 000	www.trinetimb.com
28	Prestel Online	(0990) 223 300	www.prestel.co.uk
29	Total Connectivity Providers	(01703) 571 300	www.tcp.co.uk
30	Intonet	(0181) 941 9195	www.intonet.co.uk
31	Hiway	(01635) 573 300	www.hiway.co.uk
32	Frontier Internet Services	(0171) 536 9090	www.ftech.co.uk
33	Inter@lpha	(01703) 363 200	www.interalpha.net
34	Netcom Internet	(0800) 980 9107	www.netcom.net.uk
35	DIALnet	(0800) 881 881	www.dialnet.com
36	BT Internet	(0800) 800 001	www.btinternet.com
37	Onyx Internet	(0345) 715 715	www.onyxnet.co.uk
38	SoftProg NET	(0181) 788 0656	www.softprog.net
39	Direct Net @ccess	(01232) 201 555	www.d-n-a.net
40	WyeNet	(01989) 762 476	www.wyenet.co.uk
41	PowerNet International	(0500) 011501	www.powernet-int.co.uk
42	The Internet Business	(01232) 424 190	www.tibus.net
43	MetroNet	(0800) 074 1881	www.metronet.co.uk
44	NTL Internet	(0800) 607 608	www.ntli.com
45	UUNET (Pipex Dial)	(0500) 567 000	www.uk.uu.net
46	VossNet	(01753) 737 800	www.vossnet.co.uk
47	Moonlight Internet Services	(01276) 856 868	www.moon-light.co.uk
48	Virgin Net	(0500) 558 800	www.virgin.net
49	Datanet	(01252) 810 081	www.data.net.uk
50	Global Internet	(0870) 909 8041	www.global.net.uk
51	NewNet	(07000) 639 638	www.newnet.co.uk/home
52	EntWeb	(0800) 525 470	www.entweb.co.uk
53	Mistral Internet	(01273) 747 432	www.mistral.co.uk
54	Cerbernet	(0171) 360 8000	www.cerbernet.net
55	Demon Internet	(0181) 371 1234	www.demon.net
56	CommUnity Internet	(01865) 856 000	www.community.net.uk
57	Newbury Internet	(01635) 569 123	www.newbury.net
58	Newgate Communications	(0121) 327 6633	www.newgate.co.uk
59	Which? Online	(0645) 830 240	www.which.net
60	Internet Discovery	(01203) 364 400	www.discover.co.uk
61	LineOne	(0345) 777 464	www.LineOne.net
62	I-Way	(0171) 734 5734	www.i-way.co.uk
63	U-Net	(01925) 484 444	www.u-net.net
64	Telinco Internet Services	(0800) 542 0800	www.telinco.net
65	UK Online	(01749) 333 333	www.ukonline.co.uk
66	WSS Internet Access	(01793) 420 764	www.WSkiSoft.co.uk
67	FreeDotNet	(0181) 938 3338	www.thefree.net
68	Worldwide Web Services	(01784) 898 800	www.webs.co.uk
69	Enterprise	(01624) 677 666	www.enterprise.net
70	UK2NET	(0171) 538 0253	www.uk2net.com
71	Abel Internet	(0131) 445 5555	www.abel.net.uk
72	Baynet	(01222) 256 401	www.baynet.co.uk
73	Zoo Internet	(0181) 961 7000	www.zoo.co.uk
74	Easynet	(0171) 681 4444	www.easynet.co.uk
75	AngliaNet	(01473) 211 922	www.anglianet.co.uk
76	Thames Global Internet Services	(01344) 641 627	www.tgis.co.uk
77	Pavilion Internet	(01273) 607 072	www.pavilion.co.uk
78	Aviators Network	(01727) 868 468	www.aviators.net
79	Surflink	(0181) 903 2777	www.surflink.co.uk
80	Andover On-line	(01264) 334 822	www.andover.co.uk
81	Cable & Wireless Internet	(0800) 092 9001	www.cwcom.net
82	WebLeicester	(0116) 223 0070	www.webleicester.co.uk
83	Paradise Internet Network Services	(01256) 414 863	www.pins.co.uk
84	INTERact	(01753) 776 699	www.interact.net.uk
85	Northants Computer Centre	(01604) 622539	www.nccnet.co.uk

Top performers in the past six months

As well as our normal tests, every month we produce a table showing how the ISPs have performed over the past six months. This table is created from the figures produced over the last six months of our tests. We take our data from availability and Web access speeds and produce an average. The table only includes ISPs that have been in our tests for each of the past six months. Many providers have only recently joined our tests, so they're not included in here. You shouldn't assume that a provider that's not in this table is a poor ISP – their absence could be caused by not being included in our regular tests over the full six-month period.

The results

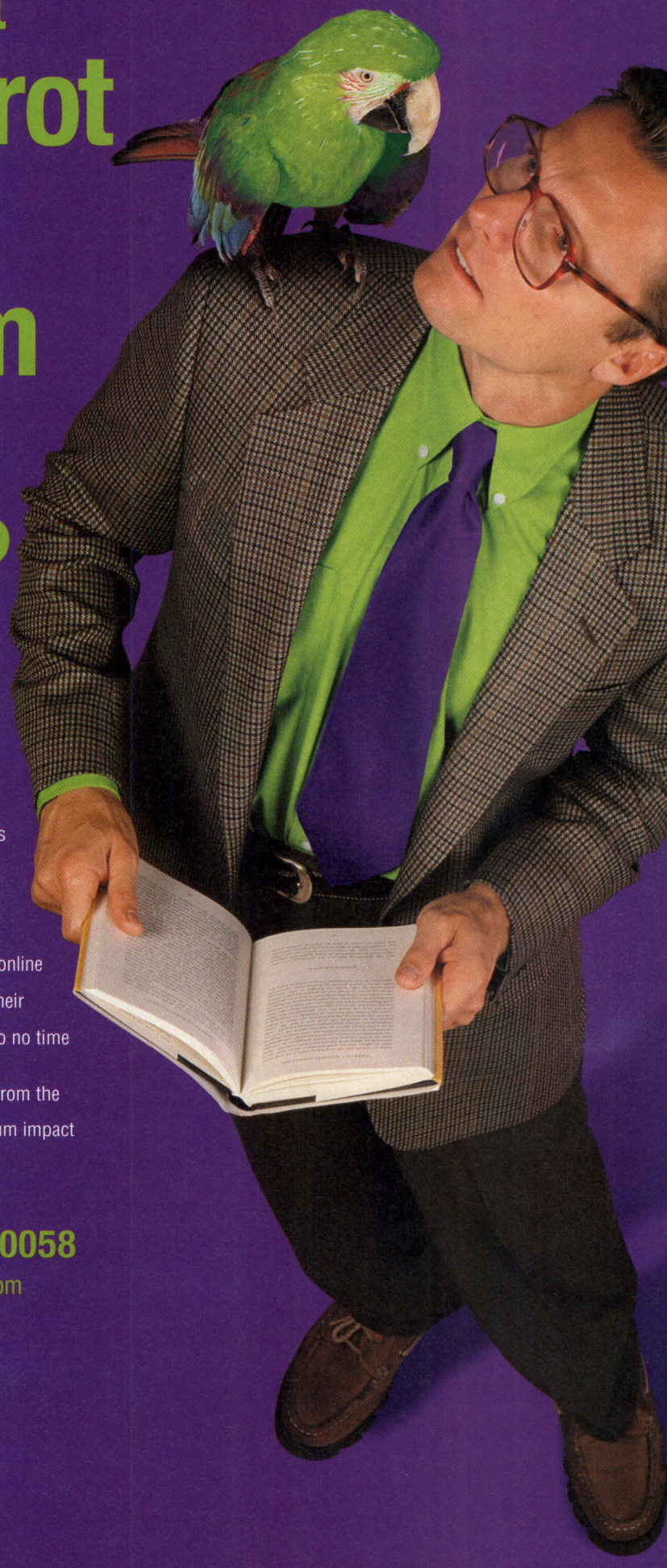
This month, 85 providers qualify for our six-month tests. Due to the problems we had with testing, Wave Rider isn't included, but Technocom will no doubt be happy to have taken over the top spot.

Once again, it's a close fought thing, with only a small amount separating the providers in the top 10. Both REDNET and Primex had strong performances this month and are pushing closer to the top spot. CompuServe slips slightly (to 10th place from last month's sixth), while Nildram moves up slightly, to seventh from 12th.

Despite coming first in this month's tests, UUNET slips slightly to 45th place – due to losing their good July result, which now drops off the end of the list of results used to produce this ranking. As a result of using results for the past six months (including the current month), a good result seven months ago is no longer any use, and losing it will sometimes make a provider slip suddenly down the tables.

We'd like to correct a common misconception about these results – they aren't based on an ISP's position in the monthly tables, but on the availability and Web speed data collected. The six-month tests are calculated in the same way as the monthly results, but using the data from six months worth of tests.

what do a **wobbly parrot** and a **bookworm** have in common?



They both know that Internet solutions from i-way make web sites worth looking at.

Wobbly parrots love the Internet. Their rescue centre's web site finds them homes, raises money and helps parrot people everywhere keep in touch.

The Internet is ideal for bookworms too. At Bloomsbury's online bookshop they can browse to their hearts' content, fill their shopping trolleys and have books on their doorsteps in next to no time

Find out how i-way has helped other web sites to stand out from the crowd. And how yours could as well: whether it needs maximum impact web design and hosting, or high speed connectivity.

www.i-way.net.uk tel: 0118 958 0058

www.wobblyparrot.org www.bloomsbury.com

i-way

global reach, local touch

a via company

pick a prov

The most up to date information is vital when you're choosing from the hundreds of Internet service providers, and you'll find no better guide than the next six pages of our Pick a Provider section. From free ISPs through to leased line providers, you'll find them all here...

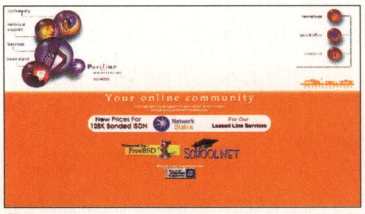
Pavilion almost up to speed

Pavilion Internet has given its subscribers a boost by installing an 8Mb connection to the London Internet Exchange. This will bring a whopping 400 per cent increase in the speed of its connection.

Pavilion says the massive growth in Internet use in Sussex prompted the move. But Pavilion seems to be ignoring the rest of the world – the Web site hasn't been updated since January '98 – a poor performance.

Pavilion's MD, David Taylor said "It's something that's run away from us because we've doubled in size this year." The site now plans to move away from HTML, with improved connectivity and new products for schools also planned.

www.pavilion.net



The sorely neglected Pavilion Web site

New ISPs this month

Newcomer Swift Internet offers an impressive 20Mb of free Web space. But you'll have to sign up for a year to join. And it'll cost you £98.70.

www.swiftinter.net

On-Line Internet makes its debut as a business ISP and new media operation.

www.online-inter.net

1 January saw the launch of Free4All, with an 0845 local-rate support line, unlimited POP3 email accounts and 10Mb of free Web space.

www.free4all.co.uk

New ISP Inweb offers 10Mb Web space and POP3 email. The ISP is offering domain names for only £80+VAT.

www.inweb.net.uk

Southampton has a new ISP. Searley Data Services offers 5Mb of free Web space and a POP3 email with five aliases for £11 a month, or £99 for a year in advance.

www.searley.net

Another newcomer is Odyssey Internet, which offers email, guaranteed first time connection and local call rates for £9.99 a month (plus VAT).

www.odysseynet.net

CompuServe adds Scoot to service

CompuServe (**www.compuserve.co.uk**) has teamed up with Scoot (**www.scoot.co.uk**). Its members can now access Scoot's database of two million UK business and services records at the touch of a GO button.

Traffic comes to a halt for Globix

Giant American ISP Globix (**www.globix.com**) has been stopping traffic in the UK, but only the four-wheeled variety. The business service provider blocked the street with a huge crane while it installed two huge chillers on the roof of its London HQ. It's all in a good cause though – its computers now enjoy the perfect temperature (which is 18°c, apparently). The company also has its own generators, so the service can also survive a power cut.

Attempts to reshuffle the Aussie pack

Merger mania continues to affect ISPs worldwide. It started with the rumour that AOL (**www.aol.com**) and European media group Bertelsmann were looking to break into the Australian market by acquiring Optus – the Cable & Wireless (**www.cwcom.net**) operation down under. Now US telecom giant MCI WorldCom – parent company of UUNET (**www.uk.uu.net**) has offered to buy Australia's top Internet service, OzEmail, for $322.8 million.

News in brief

Brighton-based **Mistral Internet** has shifted its focus, and now claims to be the leading ISP for business connectivity. It has its own transatlantic banwidth and is a member of The London Internet Exchange.

www.mistral-uk.net

Redvan will no longer feature in our listings. According to a spokesperson, the ISP is "currently changing ownership and the focus of our company", and has asked to be taken off our listings. Consider it done.

www.redvan.net

America Online is working on a hybrid Internet-television service to be called AOL TV. Viewers around the world will be able to discuss programmes as they watch them.

www.aol.co.uk

Warwickshire-based **Internet UK** can now be found at

www.internet-uk.net

It's all change in Aylesbury too, as **ISP Nildram** gets a new URL.

www.nildram.net

Business provider **REDNET** has changed its telephone number to (01494) 513 333.

www.red.net

If you've got any ISP news or want to be included in our listings or ISP tests, we want to hear from you – email us at **providers@internet.emap.com**

see how internet solutions can make your website fly

www.i-way.net.uk tel: 0118 958 0058

i-way

global reach, local touch

a via company

vider

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Online Content Providers (you have to pay for content)						
AOL*	(0800) 279 1234	queryuk@aol.com	www.aol.co.uk	7.45-10.30 Mon-Fri / 9.00-17.30 Sat	from £4.95	AOL
CompuServe*	(0990) 000 200	customerservice@compuserve.co.uk	www.compuserve.co.uk	8.00-midnight every day	from £6.50	CompuServe
LineOne*	(0345) 777 464	enquiries@LineOne.net	www.LineOne.net	8.00-22.00 Mon-Sat / 10.00-22.00 Sun	£14.95	BTnet
MSN*	(0345) 002 000	ukweb@microsoft-contact.co.uk	www.uk.msn.com	24 hours a day	from £4.95	UUNET
Which? On-line*	(0645) 830 240	support@which.net	www.which.net	24 hours a day	£14.75	NTL Internet
Free Internet access services (all you pay is the cost of the phone calls)						
BT Click+	(0800) 783 9999	sales@btclick.com	www.btclick.com	24 hours a day	1p-4p per minute	BTnet
Connect Free	(0702) 115 2525	info@connectfree.net	www.connectfree.net	email only	FREE	Telinco
Freeserve	(0990) 500 049	info@freeserve.net	www.freeserve.net	24 hours a day - Premium Rate	FREE	Energis
The Mail	(01424) 830 907	info@themail.co.uk	www.themail.co.uk	none	FREE	Nildram / Telinco
X Stream	(0870) 730 6466	info@x-stream.com	www.x-stream.com	24 hours a day	FREE	COLT Internet
Service providers offering full UK coverage						
4theNET Internet	(0870) 787 1388	sales@4thenet.co.uk	www.4thenet.co.uk	9.00-17.30 Mon-Fri	£3.99	Arena
AAP Internet	(0181) 427 1166	sales@aapi.co.uk	www.aapi.co.uk	10.00-20.00 Mon-Fri / 14.00-18.00 Sat-Sun	£12.91	Netkonect
Abel Internet	(0131) 445 5555	info@abel.co.uk	www.abel.net.uk	9.00-23.00 every day	£11.16	Quza / Racal
Ace Internet	(0705) 066 7423	sales@ace-internet.co.uk	www.ace-internet.co.uk	24 hours a day	£11.99	Netkonect
ACGNET	(0171) 377 9114	sales@acgnet.co.uk	www.acgnet.co.uk	9.00-18.00 Mon-Fri	£11.81	Nildram
AIC	(01279) 865 290	entanet@aic.co.uk	www.aic.co.uk/entanet	9.00-18.00 Mon-Sat	£8.80	VBCnet
Airtime Internet Resources	(01254) 676 921	sales@airtime.co.uk	www.airtime.co.uk	9.00-17.00 Mon-Fri	£15.27	UUNET
Albatross	(01603) 442 233	enquiries@albatross.co.uk	www.albatross.co.uk	9.00-19.30 Mon-Fri	£11.74	BTnet
Argo Interactive	(01243) 815 815	sales@argonet.co.uk	www.argonet.co.uk	10.00-17.00 Mon-Sat	£10	UUNET
Astra Internet	(0800) 018 2001	sales@astra.co.uk	www.astra.co.uk	9.00-17.00 Mon-Fri/ 9.00-12.00 Sat	£12.93	GX Networks
Atlas Internet*	(0171) 312 0400	info@atlas.net.uk	www.atlas.net.uk	24 hours a day	£14.10	UUNET
Aviators Network	(01727) 868 050	info@avnet.co.uk	www.aviators.net	24 hours a day	£11.75	GX Networks
Baynet	(01222) 256 401	enq@baynet.co.uk	www.baynet.co.uk	8.00-18.00 Mon-Fri / 9.00-17.30 Sat	£14.10	Netkonect
Beacon Internet Services	(01749) 831 056	sales@thebeacon.co.uk	www.thebeacon.co.uk	8.00-18.00 Mon-Fri	£11.75	NetOnline
Blue Chip	(0113) 232 0801	support@bchip.co.uk	www.bchip.co.uk	9.00-17.00 Mon-Fri	£15	Planet Online
Boots Internet	(01462) 743 112	support@boots.com	www.boots.com	9.00-22.00 Mon-Fri	£12.75	VBCnet
breathe on line	(0800) 298 3030	sales@breathe.co.uk	www.breathe.co.uk	24 hours a day	from £6.99	Scottish Telecom
BT Internet*	(0800) 800 001	support@btinternet.com	www.btinternet.com	24 hours a day	£11.75	BTnet
Cable Internet	(0500) 500 100	sales@cableinet.co.uk	www.cableinet.co.uk	9.00-21.00 every day	£11.74	Cable Internet
Cable Online	(0800) 052 2000	support@cableol.net	www.cableol.net	24 hours a day	£11.75	NTL Internet
Cable & Wireless Internet *	(0800) 092 9001	support@mcmail.com	www.cwcom.net	24 hours a day	£10	Cable & Wireless
CableNet	(01424) 830 900	info@cablenet.net	www.cablenet.net	24 hours a day	£10	VBCnet
Castle.Net	(0181) 477 5623	sales@castle.net.uk	www.castle.net.uk	6.00-21.00 Mon-Fri	£8.81	Technocom
Charis Internet Services	(0121) 248 5800	duncan@charis.net	www.charis.net	8.00-19.00 Mon-Fri / 8.00-12.00 Sat	£11.75	Cable Inet / Wisper
Cheapnet	(0990) 168 160	info@cheapnet.co.uk	www.cheapnet.co.uk	9.00-18.30 Mon-Fri	£50 pa	Capethorn
Chertsey Communications	(01344) 640 594	info@chertsey.com	www.chertsey.co.uk	9.00-22.00 every day	£11.75	Wisper / VBCnet
City Netgates*	(0117) 907 4000	info@netgates.co.uk	www.netgates.co.uk	8.00-18.00 Mon-Fri	£11.75	Wisper
CIX	(0181) 255 5151	sales@cix.co.uk	www.cix.co.uk	9.00-22.00 Mon-Fri / 12.00-18.00 Sat	£7.34	BTnet / INS
ClaraNET	(0800) 358 2828	info@clara.net	www.clara.net	24 hours a day	£11.63	Netkonect / INS
Cocoon Internet Services	(0171) 792 8945	admin@cocoon.co.uk	www.cocoon.co.uk	8.00-20.00 Mon-Fri / 10.00-19.00 Sat-Sun	£17.62	UUNET
Colloquium	(0500) 008 543	sales@colloquium.co.uk	www.colloquium.co.uk	24 hours a day	£14.10	UUNET
Computalynx	(01604) 231 437	sales@computalynx.co.uk	www.computalynx.co.uk	9.00-21.00 every day	£11.75	Wisper

Key: LL – leased line ISDN – ISDN BDU – Business Dial-Up

How to choose a service provider

Where to start

Most service providers let you connect to the Net for the price of a local phone call and this is an important factor in your choice. ISPs use systems run by companies such as BT, Energis and Mercury, where the phone number starts with 0345, 0645 or 0845.

Now look at how the providers charge for their services. There are free access providers, but most ISPs charge a flat fee for unlimited use of the Net. Other companies (such as AOL, MSN and CompuServe) have their own conent and charge for the time you're online. They have options that give you three or five hours online. Once you exceed this figure you're charged at an hourly rate.

Out into the big wide Internet

If your ISP's Net connections are small and clogged, you can expect slow Web access, email that takes a long time to be delivered and many other problems. We run regular tests of service providers to find the fastest. See page 146 for this month's results.

Supporting the customer

Technical support is vital. You need help during the times you're on the Net. Don't be afraid to ask for the number before signing up. Give it a ring and ask them a tricky question.

Industry associations

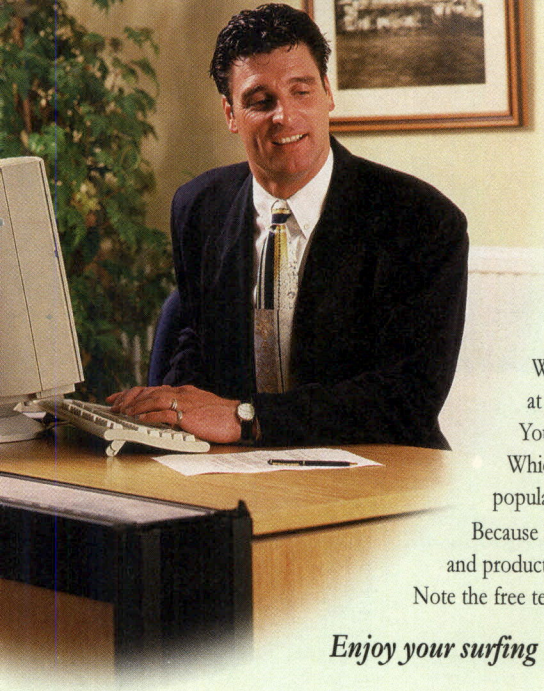
There are a couple of Internet industry associations your ISP could join. The ISPA (Internet Service Providers Association) was set up to establish a code of practice for service providers. If you have a complaint about your service provider, you can take it to the ISPA (www.ispa.org.uk). Other service providers are members of the ISPC, a consortium of ISPs which combine their resources to provide an improved service (www.ispc.co.uk).

● Members of the ISPA are marked with an * while ISPC members have a † by their company name.

pick a provider

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Full UK coverage						
CPD Online	(0181) 446 7890	sales@cpd.co.uk	www.cyberspace.cpd.co.uk	9.00-18.00 Mon-Fri	£11.75	Nildram
Croxsons New Media	(01494) 777 999	info@cnm-uk.net	www.cnm-uk.net	9.00-17.00 Mon-Fri	£25	INS
Cyber Guide †	(01753) 891 879	sales@cyber-guide.net	www.cyber-guide.co.uk	24 hours a day	£9.69	Cable Internet
Cyber Ware	(01733) 765 005	steve@cyberware.co.uk	www.cyberware.co.uk	9.00-midnight Mon-Fri	£11.74	BTnet
CYBERphile Internet	(01543) 454 840	info@cyberphile.co.uk	www.cyberphile.co.uk	8.30-18.30 Mon-Fri	£11.75	Xara
Cyberscape †	(01253) 724 000	admin@cyberscape.net	www.cyberscape.net	10.00-18.00 every day	£14.10	Cable Internet
Cygnet Internet Services	(0181) 880 4650	info@cygnet.co.uk	www.cygnet.co.uk	9.00-19.00 Mon-Fri	£11.75	UUNET
D M Priest	(0161) 486 1110	support@dmpriest.com	www.dmpriest.com	24 hours callback	£8	Cable Internet
Datanet	(01252) 810 081	info@data.net.uk	www.data.net.uk	24 hours a day	£17.62	Planet / Wisper
Demon	(0181) 371 1234	sales@demon.net	www.demon.net	24 hours a day	£11.75	Demon
Direct Connection	(0800) 072 0000	sales@dircon.net	www.dircon.net	9.00-21.00 Mon-Fri / 10.00-17.00 Sat-Sun	£13.50	Direct Connection
Direct Net @ccess	(01232) 201 555	info@d-n-a.net	www.d-n-a.net	9.00-18.00 Mon-Sat	£8.82	NTL Internet
DNA Internet Services †	(01604) 670 717	support@dna-is.com	www.dna-is.com	8.00-20.00 mon-Fri / 9.00-17.00 Sat	£9.99	Cable Internet
Easynet *	(0171) 681 4444	sales@easynet.net	www.easynet.co.uk	24 hours a day	£11.99	Easynet / BTnet
Ecosse Telecommunications	(0800) 026 7092	netsales@ecossetel.co.uk	www.ecossetel.co.uk	9.30-17:30 Mon-Fri	£9.99	Netkonect/Ecossetel
ENTANET *	(0500) 368 263	info@enta.net	www.enta.net	9.00-21.00 every day	£10.58	Cable & Wireless
Enterprise	(01624) 677 666	sales@enterprise.net	www.enterprise.net	9.00-22.00 Mon-Fri / 10.00-16.00 Sat-Sun	£9.40	BTnet
EntWeb	(0800) 525 470	info@entweb.co.uk	www.entweb.co.uk	8.00-22.30 Mon-Fri / 10.00-18.00 Sat / 10.00-16.00 Sun	£10	Telinco
European Gateway	(0411) 704 219	aikend@easynet.co.uk	www.europeangateway.com	24 hours a day	£13	Easynet
Farebase	(01322) 280 011	Info@farebase.co.uk	www.farebase.net	7.00-19.00 Mon-Fri / 10.00-15.00 Sat-Sun	£16.45	Easynet
Force 9	(0800) 073 7800	sales@force9.net	www.force9.net	7.00-23.00 every day	£9.99	Force 9
Freedom to Surf	(0181) 881 2111	sales@freedom2surf.net	www.freedom2surf.net	9.30-17.30 Mon-Fri	£11.75	Freedom to Surf
FreeDotNet *	(0181) 938 3338	info@thefree.net	www.thefree.net	9.30-20.00 Mon & Thurs / 9.30-17.30 Tues Wed Fri	NONE	Worldcom
Frontier Internet Services	(0171) 536 9090	info@ftech.net	www.ftech.co.uk	9.00-19.00 Mon-Fri / noon-18.00 Sat	£170.38 pa	INS / Wisper
Gemsoft	(0114) 275 7070	sales@gemsoft.net	www.gemsoft.net	9.00-17.30 Mon-Sat	£12.99	Wisper / INS
Gimmel Internet †	(0800) 542 5200	info@gimmel.com	www.gimmel.net	9.00-21.00 Mon-Sat	£10	Cable Internet
Global Internet *	(0870) 909 8041	info@global.net.uk	www.global.net.uk	9.00-21.00 Mon-Fri/ 10.00-18.00 Sat-Sun	£11.75	BTnet/GX Networks
Globewide Internet Services	(0161) 953 4018	info@globewide.com	www.globewide.com	10.00-22.00 Mon-Fri	£10	BTnet / Wisper
GreenNet *	(0171) 713 1941	support@gn.apc.org	www.gn.apc.org	10.00-18.00 Mon-Fri	£15.86	UUNET
Hiway *	(01635) 573 300	info@hiway.co.uk	www.hiway.co.uk	8.30-18.00 Mon-Fri	£14.69	GX Networks/Wisper
IBM Global Services	(0990) 426 426	globalnetwork@uk.ibm.com	www.ibm.net	9.00-17.00 Mon-Fri	£17.62	IBM Global Network
Icom-Web	(0800) 731 8419	sales@icom-web.com	www.icom-web.com	10.00-22.00 Mon-Fri	£9.40	Cable and Wireless
Ideal Internet Services †	(01942) 522 333	support@idealnet.co.uk	www.idealnet.co.uk	24 hours callback	£9.50	Cable Internet
INC Internet Services	(0115) 988 1880	inc@inc.co.uk	www.inc.co.uk	10.00-18.00 Mon-Fri	from £7.89	INS
Intensive Networks *	(01672) 511 054	sales@intensive.net	www.intensive.net	9.00-19.00 Mon-Fri	£11.75	Wisper
Interactive Web	(01926) 450 099	info@wwwuk.net	www.wwwuk.net	9.00-18.00 Mon-Fri	£9.70	Cable & Wireless
Interalpha	(01703) 363 200	enquiry@interalpha.co.uk	www.interalpha.net	24 hours a day	£11.75	Wisper
Internet Alliance Exchange *	(0800) 052 0523	info@iax.net	www.iax.net	8.00-20.00 Mon-Fri / 9.00-13.00 W/e	£46.95 pa	NTL Internet
Internet UK *	(0845) 070 0006	info@internet-uk.net	www.internet-uk.net	7.00-midnight every day	£11.75	Wisper
Intonet	(0181) 941 9195	info@intonet.co.uk	www.intonet.co.uk	8.00-20.00 Mon-Sat	£11.75	BTnet
Inweb	(0845) 606 2014	info@inweb.net.uk	www.inweb.net.uk	24 hours a day	£10	Inweb Networks
K Web	(01273) 763 500	info@.k-web.co.uk	www.k-web.co.uk	24 hours a day	£11.69	Planet Online
KeepNet	(01869) 276 000	info@keepnet.co.uk	www.keepnet.co.uk	none	£60 pa	Capethorn
KEMAnet	(07000) 790 290	sales@kema.co.uk	www.kema.co.uk	9.00-20.00 Mon-Fri / 1900-2100 Sat-Sun	£11	Netkonect
Kingston Internet	(01482) 602 500	info@kingston-internet.net	www.kingston-internet.net	8.30-midnight every day	£9.75	Planet Online
LarkNet	(01638) 716 423	info@larknet.co.uk	www.larknet.co.uk	8.00-20.00 Mon-Fri / 9.00-13.00 sat	£11.75	Cable Internet
London Internet	(0171) 838 1199	info@london-int.net	www.london-internet.net	9.00-18.00 Mon-Sat	£11.75	Intensive Networks
London Web Communications	(0800) 026 8306	internet@londonweb.net	www.londonweb.net	9.00-21.00 Mon-Sat / pager Sun	£14.68	Netkonect
MacLine	(0181) 401 1111	orders@macline.co.uk	www.macline.co.uk	9.00-18.00 Mon-Fri	£14.10	Atlas
Madhouse Net	(0800) 074 8283	info@madhouse.uk.com	www.madhouse.uk.com	8.00-20.00 Mon-Fri	£11.75	NACAMAR
Mailbox Internet	(0171) 371 8558	info@mailbox.co.uk	www.mailbox.co.uk	8.00-midnight Mon-Fri	from £5.88	Netkonect
Mercia Internet	(01827) 69166	sales@mercia.net	www.mercia.net	9.00-17.30 Mon-Fri	£11.50	Netkonect
Ministry of Sound	(0870) 909 8200	sales@ministryofsound.net	www.ministryofsound.net	8.30-21.00 Mon-Fri / 10.00 18.00 w/e	£11.75	Global Internet
Mistral Internet	(0800) 328 7253	info@mistral-uk.net	www.mistral-uk.net	9.30-17.30 Mon-Fri / 10.00-16.00 Sat	BDU / ISDN/ LLO	Mistral
Mitsubishi Electric Net Servs	(0800) 226 600	enquiries@menet.net	www.menet.net	8.00-20.00 Mon-Fri / 10.00-18.00 Sat	£9.75	BTnet
Moonlight †	(01276) 856 868	sales@moon-light.co.uk	www.moon-light.co.uk	9.00-18.00 Mon-Fri	£14.95	Cable Internet
Nationwide ISP	(0800) 731 6860	sales@nationwide.co.uk	www.nationwide.co.uk	24 hours a day	£7.50	BTnet
Net Online	(07000) 638 665	sales@nol.co.uk	www.nol.co.uk	9.00-20.00 every day	£11.75	Global One / Quza
Netcom Internet	(0800) 980 9107	info@netcomuk.co.uk	www.netcom.net.uk	24 hours a day	£14.95	Netcom
NetDirect Internet	(0800) 731 3311	info@netdirect.net.uk	www.netdirect.net.uk	9.00-21.00 Mon-Fri / 9.00-18.00 Sat-Sun	from £8.99	BTnet/BusinessNet
Netkonect	(0171) 345 7777	info@netkonect.net	www.netkonect.co.uk	9.00-18.00 Mon-Fri / 9.00-13.00 Sat	£11.75	Netkonect
NetMatters	(0345) 573 377	info@netmatters.co.uk	www.netmatters.co.uk	8.00-20.00 Mon-Fri	£11.75	Wisper / VBCnet
Newbury Internet	(01635) 569 123	sales.enq@newbury.net	www.newbury.net	24 hours a day	£11.75	Intensive Networks
NewNet *	(07000) 639 638	sales@newnet.co.uk	www.newnet.co.uk/home	9.00-22.00 every day	£9.74	Wisper / VBCnet
Nildram	(0800) 496 2903	sales@nildram.net	www.nildram.net	9.00-23.00 every day	from £5	Nildram
On-Line Internet	(01963) 32904	info@ol-i.com	www.ol-i.com	9.00-19.00 Mon-Fri / 9.00-13.00 w/e	BDU / ISDN	BTnet
ONET	(0800) 980 6998	sales@onet.co.uk	www.onet.co.uk	9.00-20.00 Mon-Fri / 10.00-16.00 Sat	£175 for life	GX Networks
Onyx	(0345) 715 715	sales@onyxnet.co.uk	www.onyxnet.co.uk	8.30-18.00 Mon-Fri	£11.75	Onyx
Orchid Information Systems	(01763) 244 007	internet@orchinfo.co.uk	www.orchidinfo.co.uk	8:30-18..00 Mon-Fri	£11.75	Cerbernet
Paston Chase	(01603) 502 061	sales@paston.co.uk	www.paston.co.uk	9.00-17.00 every day	£10.58	Wisper
Nationwide ISP	(0800) 731 6860	sales@nationwide.co.uk	www.nationwide.co.uk	24 hours a day	£7.50	BTnet



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AOL	✓	✗	✓	✗	✗	✓	£71.40	£179.40	£179.40
Compuserve	✓	✓	✓	✗	✗	✗	£78.00	£241.80	£282.00
Demon	✓	✓	✓	✓	✗	✗	£155.68	£155.68	£155.68
Virgin	✓	✓	✓	✗	✗	✗	£143.88	£143.88	£143.88
Pipex	✓	✓	✓	✗	✗	✓	£151.75	£151.75	£151.75
Global	✓	✓	✓	✓	✗	✗	£89.99	£89.99	£89.99
Force9	✓	✓	✓	✓	✓	✓	**£59.88**	**£59.88**	**£59.88**

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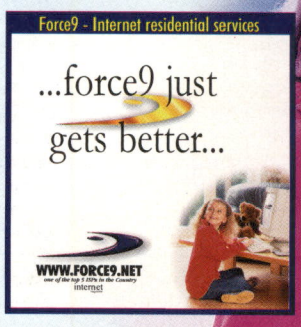

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pick a provider

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Full UK coverage						
Net Online	(07000) 638 665	sales@nol.co.uk	www.nol.co.uk	9.00-20.00 every day	£11.75	Global One / Quza
Netcom Internet	(0800) 980 9107	info@netcomuk.co.uk	www.netcom.net.uk	24 hours a day	£14.95	Netcom
NetDirect Internet	(0800) 731 3311	info@netdirect.net.uk	www.netdirect.net.uk	9.00-21.00 Mon-Fri / 9.00-18.00 Sat-Sun	from £8.99	BTnet/BusinessNet
Netkonect	(0171) 345 7777	info@netkonect.net	www.netkonect.co.uk	9.00-18.00 Mon-Fri / 9.00-13.00 Sat	£11.75	Netkonect
NetMatters	(0345) 573 377	info@netmatters.co.uk	www.netmatters.co.uk	8.00-20.00 Mon-Fri	£11.75	Wisper / VBCnet
Newbury Internet	(01635) 569 123	sales.enq@newbury.net	www.newbury.net	24 hours a day	£11.75	Intensive Networks
NewNet*	(07000) 639 638	sales@newnet.co.uk	www.newnet.co.uk/home	9.00-22.00 every day	£9.74	Wisper / VBCnet
Nildram	(0800) 496 2903	sales@nildram.net	www.nildram.net	9.00-23.00 every day	from £5	Nildram
On-Line Internet	(01963) 32904	info@ol-i.com	www.ol-i.com	9.00-19.00 Mon-Fri / 9.00-13.00 w/e	BDU / ISDN	BTnet
ONET	(0800) 980 6998	sales@onet.co.uk	www.onet.co.uk	9.00-20.00 Mon-Fri / 10.00-16.00 Sat	£175 for life	GX Networks
Onyx	(0345) 715 715	sales@onyxnet.co.uk	www.onyxnet.co.uk	8.30-18.00 Mon-Fri	£11.75	Onyx
Orchid Information Systems	(01763) 244 007	internet@orchinfo.co.uk	www.orchidinfo.co.uk	8:30-18..00 Mon-Fri	£11.75	Cerbernet
Paston Chase	(01603) 502 061	sales@paston.co.uk	www.paston.co.uk	9.00-17.00 every day	£10.58	Wisper
Pavilion Internet	(01273) 607 072	info@pavilion.co.uk	www.pavilion.co.uk	24 hours a day	£12.55	Easynet / BTnet
Pinnacle Internet	(01293) 613 686	info@pncl.co.uk	www.pncl.co.uk	9.00-19.00 Mon-Fri	£14.75	UUNET
Pipemedia OnLine	(01455) 828 218	sales@pipemedia.net	www.pipemedia.co.uk	24 hours a day	£11.75	VBCnet
Poptel*	(0171) 923 9465	info@poptel.net	www.poptel.org.uk	9.30-18.00 Mon-Fri	£11.75	GX Networks
PORTHILL.COM	(0702) 110 1200	sales@porthill.com	www.porthill.com	10am-10pm every day	from £3.99	Cable Internet
Portland Communications	(0181) 942 1115	sales@portland.co.uk	www.portland.co.uk	9.00-18.00 Mon-Fri	£11.75	Portland Comms
Power Internet*	(01908) 605 188	info@powernet.co.uk	www.powernet.co.uk	24 hours a day	£14.10	BTnet
Prestel Online*	(0990) 223 300	enquiry@netsales.prestel.co.uk	www.prestel.co.uk	24 hours a day	£10.56	Scottish Telecom
Primex	(01908) 643 597	info@alpha.primex.co.uk	www.primex.co.uk	8.00-21.00 every day	£11.75	On-Net / Netkonect
Pro-Net Internet Services †	(0181) 200 3565	sales@pro-net.co.uk	www.pro-net.co.uk	9.00-18.00 Mon-Fri / 9.00-16.00 Sat	£116.33 pa	Cable Internet
ProWeb	(0500) 636 343	sales@proweb.net	www.proweb.co.uk	24 hours a day	from £10	Diamond Cable
PurpleNet	(0800) 783 4535	sales@purplenet.co.uk	www.purplenet.co.uk	9.00-22.00 Mon-Fri / 10.00-18.00 w/e	£5.99	Wisper
Python Internet	(0870) 606 0125	sales@python.co.uk	www.python.co.uk	9.30-19.00 Mon Fri	£11.75	INS
RapidNet †	(0151) 722 0304	sales@rapid.net.uk	www.rapid.net.uk	9.00-17.30 Mon-Fri	£9.40	Cable Internet
Research Machines*	(01235) 826 868	sales@rmplc.co.uk	www.rmplc.co.uk	9.00-21.00 Mon-Fri	£12.50	GX Networks/Wisper
ROM Group	(01237) 426 110	info@rom.net	www.rom.net	9.00-18.00 Mon-Fri	£11.75	UUNET/GX Networks
RSC Internet	(01224) 585 113	info@rsc.co.uk	www.rsc.co.uk	9.00-18.00 Mon-Sat	£9.99	BTnet
SAQ Network Services	(0800) 358 9000	sales@saqnet.co.uk	www.saqnet.co.uk	24 hours a day	£12.50	COLT
Scotland Online	(0845) 027 2027	admin@sol.co.uk	www.scotland.net	24 hours a day	£11.75	Scottish Telecom
Searley Data Services	(01703) 892 351	info@searley.net	www.searley.net	9.00-21.00 Mon-Fri / 9.00-11.00 Sat / 18.00-21.00 Sun	£11	Interweb
SIMNET	(0800) 0745 547	sales@simnet.co.uk	www.simnet.co.uk	9.00-21.00 Mon-Fri / 9.00-12.00 Sat	£9.40	Telinco Net Services
SoftNet	(01675) 464 488	postmaster@softnet.co.uk	www.softnet.co.uk	9.00-17.00 Mon-Fri	£9.99	Planet Online
Sonnet Internet	(0171) 891 2000	enquire@sonnet.co.uk	www.sonnet.co.uk	9.00-21.00 Mon-Fri / 9.00-18.00 Sat	£14.69	BusinessNet
SOS Internet	(01271) 321 145	sosi@sosi.net	www.sosi.net	9.00-17.30 Mon-Sat	£11.75	Intensive Networks
SurfAid	(0870) 907 1000	info@surfaid.org	www.surfaid.org	9.00-21.00 Mon-Fri / 10.00-18.00 Sat-Sun	£8.81	GX Networks
Surflink	(0181) 903 2777	info@surflink.co.uk	www.surflink.co.uk	24 hours a day	£9.99	BTnet
Telinco Internet Services †	(0800) 542 0800	sales@telinco.net	www.telinco.net	9.00-21.00 Mon-Sat	£5	Cable Internet
TescoNet	(0845) 605 0200	info@tesco.net	www.tesco.co.uk	24 hours a day	£8.99	BTnet
The Network Group	(01293) 616 000	info@network-group.com	www.network-group.com	8.30-18.00 Mon-Fri	£15	UUNET
Tia Net	(0800) 092 6070	info@tianet.com	www.tianet.com	24 hours a day	£6.93	Cable Internet
Tiggers Net	(0118) 973 6060	support@tiggers.net	www.tiggers.net	8.00-20.00 Mon-Fri	£11.75	Cable Internet
Timewarp Internet*	(0161) 950 8855	sales@timewarp.co.uk	www.timewarp.co.uk	9.00-20.30 Mon-Fri	£8.25	Cable Inet / Wisper
TMS	(01902) 420 999	sales@tmsnet.co.uk	www.tms.net.uk	8.30-17.00 Mon-Fri	£12	BTnet
TriNET	(01539) 731 000	dmacdonald@trinetimb.com	www.trinetimb.com	9.00-17.30 Mon-Fri	£11.75	Planet Online
U-Net*	(01925) 484 444	sales@u-net.net	www.u-net.net	24 hours a day	£14.10	U-Net
UK Online	(01749) 333 333	sales@ukonline.co.uk	www.ukonline.co.uk	24 hours a day	£11.99	Easynet
UKIP †	(01772) 908 000	internet@ukip.co.uk	www.ukip.co.uk	9.00-18.00 Mon-Fri / 9.00-17.00 Sat / 10.00-16.00 Sun	£146.87 pa	Cable Inet/NACAMAR
UniNet Internet Services	(0800) 783 7499	info@uninet.co.uk	www.uninet.co.uk	24 hours a day	£11.15	Planet Online
UUNET (Pipex Dial)*	(0500) 567 000	sales@uk.uu.net	www.uk.uu.net	9.00-20.00 Mon-Fri / 10.00-18.00 Sat	£14.98	UUNET
Valiant Internet Services	(0191) 523 8544	sales@valiant.co.uk	www.valiant.co.uk	9.30-17.30 Mon-Fri	£9.99	Cable & Wireless
Virgin Net	(0500) 558 800	advice@virgin.net	www.virgin.net	24 hours a day	£11.99	NTL Internet
Wave Rider Internet	(0121) 603 3888	info@waverider.net.uk	www.waverider.co.uk	24 hours a day	£12	VBCnet
Webpro	(0181) 886 2424	info@webpro.net.uk	www.webpro.net.uk	24 hours a day	£14.69	Planet Online
Webscape	(01963) 370 800	webmaster@webscape.co.uk	www.webscape.org	24 hours a day	£141 pa	GX Networks
WinNET Communications	(0181) 930 6688	sales@win-uk.net	www.win-uk.net	9.30-18.00 Mon-Fri	£17.63	UUNET
Wirenet Amiga	(01925) 496 482	sales@wirenet.co.uk	www.wirenet.co.uk	9.00-19.00 Mon-Fri / 9.00-13.00 Sat	£14.25	U-Net
WiSS	(01248) 602 405	enquiries@wiss.co.uk	www.wiss.co.uk	9.00-22.00 every day	£11.75	Celtic Internet
Woden Network Systems	(0121) 242 4500	sales@woden.com	www.woden.com	8.30-22.30 Mon-Fri	£10	VBC Net
Worldwide Web Services	(01784) 898 800	info@webs.co.uk	www.webs.co.uk	9.00-18.00 Mon-Fri	£17.62	U-Net
Zetnet Services	(01595) 696 667	info@zetnet.co.uk	www.zetnet.co.uk	24 hours a day	£7.50	BTnet / Wisper
Zoo Internet	(0181) 961 7000	enquiry@zoo.co.uk	www.zoo.co.uk	9.00-21.00 every day	£6.95*	Zoo Internet
Zulu Internet	(01494) 758 895	sales@zulu.co.uk	www.zulu.co.uk	8.00-21.00 every day	from £5	Nildram
East						
AngliaNet*	(01473) 211 922	tony@anglianet.co.uk	www.anglianet.co.uk	8.00-21.00 Mon-Sat / 11.00-19.00 Sun	£11.75	Wisper
Foobar Internet	(0116) 233 0033	sales@foobar.co.uk	www.foobar.co.uk	9.00-17.00 Mon-Fri	£11.75	Netkonect
KeConnect Internet Services	(01473) 403 020	sales@keconnect.co.uk	www.keme.co.uk	9.00-21.00 Mon-Fri / 10.00-14.00 Sat-Sun	£11.75	Wisper
Net Solutions Europe	(01255) 233 300	sales@nse.co.uk	www.nse.co.uk	9.00-17.00 Mon-Fri	£193.88 pa	Technocom
RJT Internet Services	(01493) 857 048	postmaster@rjt.co.uk	www.rjt.co.uk	9.00-17.00 Mon-Sat	£9.39	BTnet

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The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Ireland						
Creative Online Media	(01232) 370 124	info@creativeonlinemedia.com	www.creativeonlinemedia.com	8.30-17.30 Mon-Fri	BDU / ISDN / LL	PSInet
Indigo	(00353) 1 604 6901	info@indigo.ie	www.indigo.ie	9.00-18.00 Mon-Fri	£11.75	AT&T / BBN Planet
Ireland On-Line	(00353) 1 604 6800	sales@iol.ie	www.iol.ie	9.00-18.00 Mon-Fri	£15.13	UUNET
Telecom Internet	(00353) 1 269 22 22	sales@tinet.ie	www.tinet.ie	9.30-17.30 Mon-Fri	£14.10	Telecom Eireann
The Internet Business	(01232) 424 190	info@tibus.net	www.tibus.net	9.00-17.30 Mon-Fri	£8.81	BTnet
Unite Solutions	(01232) 777 338	solutions@unite.net	www.unite.net	9.00-17.00 Mon-Fri	£12.50	BTnet
WydeWorld	(01232) 300 555	info@wydeworld.com	www.wydeworld.com	8.30-21.00 Mon-Fri	£125 pa	NTL Internet
London and South East						
Adept	(01843) 850 444	sales@adept.co.uk	www.adept.co.uk	8.30-18.00 Mon-Fri	£11.75	Wisper
Alpha-Access	(01344) 750 505	office@alpha-access.co.uk	www.alpha-access.co.uk	9.00-17.30 Mon-Fri	£11.75	Wisper
Amity Internet	(0500) 200 171	info@amity.co.uk	www.amity.co.uk	8.00-19.00 Mon-Fri	£11.63	BTnet
Bogomip	(0181) 960 3050	info@mail.bogo.co.uk	www.bogo.co.uk	10.00-20.00 Mon-Fri / 10.00-17.00 Sat-Sun	£12	BTnet
CentreNet	(0800) 243 336	info@centre.net.uk	www.centre.net.uk	24 hours a day	£8.33	BTnet
Exconet	(01268) 453 000	sales@exconet.co.uk	www.exconet.co.uk	9.00-22.00 Mon-Fri	£11.75	Nildram
ExNet Systems*	(0181) 296 5577	info@exnet.com	www.exnet.com	10.00-midnight Mon-Fri	£14.10	VBCnet
FlexNet	(01638) 711 550	info@flexnet.net	www.flexnet.co.uk	9.00-18.00 Mon-Fri	£11.75	Netcom
Inter-Computer Technology	(0171) 486 9601	sales@inctech.com	www.inctech.com	24 hours a day	£17.63	Wisper
INTERact Internet †	(01753) 776 699	sales@interact.net.uk	www.interact.net.uk	24 hours a day	from £4	Cable Internet
K2 Internet Services	(01293) 416 666	sales@K2net.co.uk	www.k2net.co.uk	24 hours a day	£11.95	Netkonect
KBnet	(01234) 271 900	sales@kbnet.co.uk	www.kbnet.co.uk	9.00-18.00 Mon-Sat	£12.93	Cabletel
KDD Euro Web	(0800) 010 510	sales@kew.net	www.kew.net	9.00-17.00 Mon-Fri	£17.62	Internet KDD
KENTnet Internet Services	(01622) 844 801	sales@kentnet.co.uk	www.kentnet.co.uk	9.00-21.00 Mon-Fri / 9.00-17.00 Sat-Sun	£11.75	BTnet
Maidenet	(01628) 825 757	enquires@maidenet.co.uk	www.maidenet.co.uk	9.00-17.00 Mon-Fri	£17.63	BTnet
MetroNet	(0800) 074 1881	info@metronet.co.uk	www.metronet.co.uk	10.30-19.00 Mon-Sat	£12.68	Quza
Moose	(01923) 238 248	info@moose.co.uk	www.moose.co.uk	8.00-18.00 Mon-Fri	£11.75	BTnet
Netmania	(0181) 252 1199	info@netmania.co.uk	www.netmania.co.uk	11.00-11.00 Mon-Fri	£42.50 pa	Wisper
SoftProg NET	(0181) 788 0656	sales@softprog.co.uk	www.softprog.net	9.00-19.00 Mon-Fri	£14.10	BTnet
Thames Global Inet Services †	(01344) 641 627	info@tgis.co.uk	www.tgis.co.uk	9.00-21.00 every day	£9.99	Cable Internet
UK2NET	(0171) 538 0253	sales@uk2net.com	www.uk2net.com	9.00-18.00 Mon-Fri	from £9.69	GX Networks
VossNet †	(01753) 737 800	info@vossnet.co.uk	www.vossnet.co.uk	9.00-19.00 Mon-Fri / 10.00-15.00 Sat	£11.75	Cable Internet
Websurfer	(0181) 354 8000	info@websurfer.co.uk	www.websurfer.co.uk	10.00-22.00 Mon-Fri	£11.75	Wisper
Midlands						
Brunel Internet	(01922) 4598 90	sales@brunel.co.uk	www.brunel.co.uk	9.00-18.00 every day	£15	BTnet
Discovery	(01203) 364 400	invent@discover.co.uk	www.discover.co.uk	8.30-17.00 Mon-Fri	£11.75	Technocom
EMNET	(0115) 956 8260	enquiries@emnet.co.uk	www.emnet.co.uk	8.30-18.00 Mon-Fri	£7.82	Wisper
Fenetre	(01538) 398 298	sales@fenetre.co.uk	www.fenetre.co.uk	9.00-17.30 Mon-Fri	£9.40	BTnet
GMTnet	(01509) 269 999	sales@gmtnet.co.uk	www.gmtnet.co.uk	9.00-17.30 Mon-Fri	£11.75	BTnet
Griffin Internet	(01332) 606 160	info@griffin.net .uk	www.griffin.net .uk	9.00-18.00 Mon-Fri	£14.69	GX Networks
Netscafe	(01242) 232 121	sales@netscafe.co.uk	www.netscafe.co.uk	10.00-22.00 every day	£100 pa	Wisper
Newgate Communications	(0121) 327 6633	marketing@newgate.co.uk	www.newgate.co.uk.	9.00-17.30 Mon-Fri	£12.50	Easynet
Northants Computer Centre †	(01604) 622539	tony@nccnet.co.uk	www.nccnet.co.uk	9.00-21.00 every day	£11.75	Cable Internet
Prima.net	(0115) 913 3372	sales@prima.net	www.prima.net	9.00-17.30 Mon-Fri	£11.74	Cable Internet
Skynet Internet Services †	(01604) 452 245	sales@skynet.co.uk	www.skynet.co.uk	9.00-19.00 Mon-Fri / 9.00-17.00 Sat	£11.75	Cable Internet
Stayfree Internet	(0116) 291 0909	sales@stayfree.co.uk	www.stayfree.co.uk	24 hours a day	£9.99	Wisper
The Internet in Nottingham *	(0115) 956 2222	info@innotts.co.uk	www.innotts.co.uk	10.00-17.30 Mon-Fri	£14.69	Wisper
WebLeicester*	(0116) 223 0070	sales@webleicester.net	www.webleicester.co.uk	9.00-18.00 Mon-Fri	£11.75	Cable & Wireless
WyeNet †	(01989) 762 476	sales@wyenet.net	www.wyenet.co.uk	9.00-21.00 every day	£14.10	Cable Internet
North East						
FirstNet Services	(0113) 294 4224	sales@firstnet.co.uk	www.firstnet.co.uk	9.00-21.00 Mon-Sat	£12.50	Energis
Legend Internet	(01274) 743 500	sales@legend.co.uk	www.legend.co.uk	8.00-20.00 Mon-Sat	£14.69	Sprint
NetBytes Internet	(0113) 294 4273	info@netbytes.yks.com	www.netbytes.yks.com	10.00-20.00 Mon-Fri	£7.50	Sprint
North West						
Chester Internet	(01244) 341 418	ken@chesternet.co.uk	www.chesternet.co.uk	9.00-17.30 Mon-Fri	£11.75	GX Networks
Cybase †	(0151) 227 4244	sales@cybase.co.uk	www.cybase.co.uk	9.00-17.00 Mon-Fri	£11.75	Cable Internet
Freeway Internet	(01204) 431 313	sales@freeway.co.uk	www.freeway.co.uk	24 hours a day	£12.95	Wisper
Kencomp Internet	(01539) 722 559	info@kencomp.net	www.kencomp.net	9.00-17.30 Mon-Sat	£11.75	Intensive Networks
Mersinet	(0151) 475 4751	info@mersinet.co.uk	www.mersinet.co.uk	24 hours a day	£11.75	Wisper
Talk 101	(01925) 245 145	sales@mail.talk-101.com	www.talk-101.com	9.00-17.00 Mon-Fri	£11.75	Wisper
The Internet Shop	(01253) 763 333	black-admin@blackpool.net	www.blackpool.net	9.00-18.00 Mon-Fri	£11.75	Intensive Networks
Zen Internet	(01706) 713 714	sales@zen.co.uk	www.zen.co.uk	9.00-20.00 Mon-Fri / 10.00-17.00 Sat-Sun	£11.75	BTnet
Scotland						
Ednet	(0131) 466 7003	info@ednet.co.uk	www.ednet.co.uk	9.00-18.00 Mon-Fri	£11.75	Wisper
Foremost Training	(0141) 566 6377	sales@scotnet.co.uk	www.scotnet.co.uk	8.00-17.30 Mon-Fri	£11.75	Wisper
TweedNet	(01573) 229 933	mike@scotborders.co.uk	www.scotborders.co.uk	24 hours a day	£17.63	Scot Telecom/Wisper
South Central						
Andover On-line	(01264) 334 822	info@andover.co.uk	www.andover.co.uk	9.00-18.00 Mon-Fri / 9.00-17.30 Sat-Sun	£12	GX Networks
Athene Internet	(01329) 828 000	jdyer@athene.co.uk	www.athenenet.co.uk	8.30-18.00 Mon-Sat	£13.50	Wisper
Bournemouth Net	(01202) 292 900	sales@bournemouth-net.co.uk	www.bournemouth-net.co.uk	9.00-17.00 Mon-Sat	£10	Quza
CintraNet †	(01703) 571 000	accounts@cintranet.co.uk	www.cintranet.co.uk	9.00-17.00 Mon-Fri	£11.75	Cable Internet
LDS Technology	(01202) 659 991	sales@lds.co.uk	www.lds.co.uk	9.00-17.00 every day	£14.99	BTnet
Paradise Network Services	(01256) 414 863	sales@pins.co.uk	www.pins.co.uk	11.00-19.00 Mon-Fri	£9.40	INS
Portsmouth Net	(01705) 420 066	sales@portsmouth-net.co.uk	www.portsmouth-net.co.uk	9.00-17.30 every day	£10	Quza

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Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
South Central						
Southampton Net	(01794) 504 040	sales@southampton-net.co.uk	www.southampton-net.co.uk	9.00-17.30 every day	£10	Quza
Total Connectivity Providers	(01703) 571 300	sales@tcp.co.uk	www.tcp.co.uk	9.00-18.00 Mon-Fri	£9.99	VBC / Wisper
Dataday Computers	(01793) 512 074	sw-1@cccp.net	www.dataday.co.uk	9.30-17.00 Mon-Fri	£14.10	Intensive Networks
Dorset Internet	(01202) 659 991	sales@lds.co.uk	www.lds.co.uk	9.00-17.30 Mon-Fri	£14.99	UUNET / BTnet
Eclipse Networking †	(01392) 202 345	eclipse@eclipse.co.uk	www.eclipse.co.uk	9.00-18.00 Mon-Fri	£9.40	Cable Internet
Gifford Internet Services	(0117) 939 7722	admin@gifford.co.uk	www.gifford.co.uk	11.00-21.00 Mon-Fri / 12.00-20.00 Sat-Sun	£9.99	VBCnet
Surfers Paradise	(01635) 569 123	brian@surfersparadise.net	www.surfersparadise.net	9.00-17.00 Mon-Fri	£12	Intensive Networks
SWIS	(01752) 228 700	swis@swis.co.uk	www.swis.net	9.00-17.00 Mon-Fri	£15	GX Networks
Taunton Cyber	(01823) 353 771	info@abling.co.uk	www.taunton-cyber.co.uk	9.00-17.00 Mon-Fri	£9.95	BTnet
The Web Factory Wessex	(01249) 812 812	sales@webwessex.co.uk	www.webwessex.co.uk	9.00-17.00 Mon-Fri	£12.50	The Web Factory
thorNET	(01454) 854 413	info@thornet.co.uk	www.thornet.co.uk	7.30-22.30 Mon-Fri	£10	Cable Inet / Wisper
West Dorset Internet	(01305) 871 543	tim@wdi.co.uk	www.wdi.co.uk	9.00-17.00 Mon-Fri	£14.69	BTnet
WSS Internet Access	(01793) 420 764	info@WSkiSoft.co.uk	www.WSkiSoft.co.uk	24 hours a day	£9.99	UUNET
Wales						
Cardiff Internet Services	(01222) 311 3134	enq@cardiff-net.co.uk	www.cardiff-net.co.uk	8.30-19.00 Mon-Fri / Sat 9.00-18.00	£11.75	NTL Internet
Connect Wales Internet	(01994) 230 330	sales@connect-wales.co.uk	www.connect-wales.co.uk	8.00-18.00 Mon-Fri	£11.75	Cymru Net
Cyberstop Interent Services	(01792) 465 050	internet@cyberstop.co.uk	www.cyberstop.net	24 hours a day	£9.95	NTL Internet
Telecall	(0117) 941 4141	sales@telecall.co.uk	www.telecall.co.uk	10.15-17.30 Mon-Fri	£11.75	BTnet / Wisper
Vapro	(01792) 775 511	vapro.sales@vapro.net	www.vapro.net	24 hours a day	£10.56	Intensive Networks
Business Providers						
1st Solution Internet*	(01256) 382 720	sales@1st-solution.net	www.1st-solution.net	9.00-18.30 Mon-Fri	BDU / ISDN / LL	Wisper
Apple Centre Warrington	(01925) 444 499	sales@applecentre.com	www.applecentre.com	9.00-17.30 Mon-Fri	BDU / ISDN / LL	Wisper
BTnet*	(0345) 585 110	sales@bt.net	www.bt.net	24 hours a day	LL	BTnet
BusinessNet*	(0171) 390 9933	sales@business.net.uk	www.business.net.uk	24 hours a day	BDU / ISDN / LL	BusinessNet
Cerbernet*	(0171) 360 8000	sales@cerbernet.net	www.cerbernet.net	9.00-18.00 Mon-Fri / pager Sat-Sun	LL	Wisper
COLT	(0171) 390 9099	info@colt.net	www.colt.net	24 hours a day	LL	COLT Internet
CommUnity Internet*	(01865) 856 000	info@community.net.uk	www.community.net.uk	9.00-18.00 Mon-Fri	BDU / ISDN / LL	VBCnet / Wisper
Data Link Internet	(01522) 681 100	sales@data-link.net	www.data-link.net	9.00-17.00 Mon-Fri	LL	BTnet
Dial Internet*	(01372) 456 000	sales@dialin.co.uk	www.dialin.co.uk	8.30-18.30 Mon-Fri	BDU / ISDN / LL	BTnet
DIALnet Connect †	(0800) 881 881	sales@dialnet.com	www.dialnet.com	24 hours a day	BDU / ISDN / LL	Cable Inet / Wisper
ElectricMail	(01223) 501 333	info@elmail.co.uk	www.elmail.co.uk	9.00-17.00 Mon-Fri	ISDN / LL	GX Networks
Epinet	(01242) 821 000	info@epinet.co.uk	www.epinet.co.uk	9.00-17.00 Mon-Fri	BDU	GX Netwks / Energis
GPL Internet Services	(01232) 572 000	sales@gpl.net	www.gpl.net	9.00-20.00 every day	ISDN / LL	NTL Internet
GX Networks	(0181) 957 1250	sales@gxn.net	www.gxn.net	9.00-18.00 Mon-Fri	LL	GX Networks
I-Way Soho	(0171) 734 5734	sales@i-way.net.uk	www.i-way.co.uk	8.00-18.30 Mon-Fri	BDU / ISDN / LL	VBC/UUNET/PSInet
ICM NetServ	(0800) 614 581	sales@netserv.net	www.netserv.net	9.00-17.30 Mon-Fri	BDO/ISDN/LL	Wisper / BTnet
Impact Web Publishing	(01628) 522 099	info@impactwp.com	www.impactwp.com	9.00-18.00 Mon-Fri	LL	GX Networks
Internet Central †	(01270) 611 000	sales@netcentral.co.uk	www.netcentral.co.uk	9.00-18.00 Mon-Sat	BDU / ISDN / LL	Cable Internet
InterNet for Business	(01224) 333 370	info@ifb.net	www.ifb.net	9.00-18.00 Mon-Fri	BDU / ISDN / LL	Wisper
Internet Network Services	(0800) 467 638	info@insnet.net	www.insnet.net	24 hours a day	ISDN / LL	INS
Internet Solutions for Business	(01203) 633 177	sales@is4b.net	www.business-solutions.net	24 hours a day	BDU / ISDN / LL	BTnet / PSInet
Interweb Design	(01344) 842 979	andrew@inweb.net.uk	www.inweb.net.uk	24 hours a day	BDU / ISDN / LL	Interweb Design
IPF.NET	(0171) 213 9666	enquiries@ipf.net.uk	www.ipf.net.uk	9.00am-18.00 Mon-Fri	ISDN / LL	IPF.NET
iQ Internet	(01273) 327 088	sales@iql.co.uk	www.iql.co.uk	9.00-17.30 Mon-Fri	BDU / ISDN / LL	Planet
ISPC †	(01628) 639 595	barryr@ispc.net	www.ispc.net	9.00-17.00 Mon-Fri	LL	Cable Internet
Mannet	(01624) 623 841	postmaster@mcb.net	www.mcb.net	9.00-17.30 Mon-Fri	BDU / ISDN / LL	BTnet
Mitoo	(0171) 209 1515	sales@mitoo.co.uk	www.mitoo.co.uk	9.00-17.30 Mon-Fri	ISDN / LL	BTnet
NACAMAR	(01438) 715 100	info@nacamar.net uk	www.nacamar.co.uk	24 hours a day	BDU / ISDN / LL	NACAMAR
NetForce Group	(01245) 257 788	sales@netforce.net	www.netforce.net	9.00-17.00 Mon-Fri	BDU / ISDN / LL	Wisper / BTnet
Netlink Solutions	(0800) 0743 936	support@netlink.uk.com	www.netlink.uk.com	24 hours a day	ISDN	UUNET / Netkonect.
NORWEB.net	(0800) 195 0196	sales@norwebcomms.com	www.norwebcomms.com	24 hours a day	ISDN / LL	The Web Factory
NTL Internet / ENABLIS	(0800) 607 608	sales@ntli.com	www.ntli.com	24 hours a day	BDU / ISDN / LL	NTL Internet
Planet Online*	(0113) 234 5566	info@theplanet.net	www.theplanet.net	24 hours a day	ISDN / LL	Planet Online
PlusNet Technologies	(0800) 073 7370	sales@plus.net.uk	www.plus.net.uk	24 hours a day	ISDN / LL	PlusNet
PSI Net	(01223) 577 577	sales@uk.psi.com	www.uk.psi.com	24 hours a day	ISDN / LL	PSI Net
Quza*	(0800) 528 0000	info@quza.com	www.quza.com	24 hours a day	BDU / ISDN / LL	Quza
REDNET	(01494) 513 333	info@red.net	www.red.net	9.00-17.30 Mon-Fri	BDU / ISDN / LL	INS
Relay Business Systems	(0345) 369 999	enquiries@relay.co.uk	www.relay.co.uk	24 hours a day	BDU / ISDN / LL	BTnet
Sardius	(01242) 521 133	info@sardius.com	www.sardius.net	9.00-6.00 Mon-Fri	BDU	Netkonect
Smartways Internet	(01604) 670 500	info@smartways.com	www.smartways.com	9.00-18.00 Mon-Fri	BDU / ISDN / LL	Wisper
Star Internet	(01285) 647 022	info@star.co.uk	www.star.co.uk	8.30-19.00 Mon-Fri	BDU / ISDN / LL	Global One / Wisper
Technocom	(01753) 714 200	isales@technocom.net	www.technocom.net	9.00-17.30 Mon-Fri	BDU / ISDN / LL	Technocom
The Education Exchange (EDEX)	(0181) 239 5000	info@internet.net.uk	www.internet.net.uk	24 hours a day	ISDN / LL	INS
VAS-NET	(01732) 866 529	sales@vas-net.net	www.vas-net.net	8.00-20.00 every day	£4.08	VAS-NET
VBCnet*	(0117) 929 1316	sales@vbc.net	www.vbc.net	24 hours a day	LL	VBCnet
Web Plus*	(0345) 932 758	sales@webplus.co.uk	www.webplus.co.uk	9.00-21.00 Mon-Fri / 9.00-20.00 Sat-Sun	BDU / ISDN / LL	Web Ltd / BTnet
WebScotland	(0141) 418 0880	sales@webscotland.co.uk	www.webscotland.co.uk	9.00-17.00 Mon-Fri	BDU / ISDN / LL	BTnet
Wisper	(0181) 239 5008	sales@wisper.net	www.wisper.net	24 hours a day	LL	Wisper
Zereau	(0800) 064 1770	sales@zereau.com	www.zereau.com	9.00-17.30 Mon-Fri	BDU / LL	Wisper

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As the internet becomes less of a playground and more of a vehicle for businesses to market their goods and services, domain names are becoming a crucial part of a company's image.

UK Registration
£89.99 +VAT

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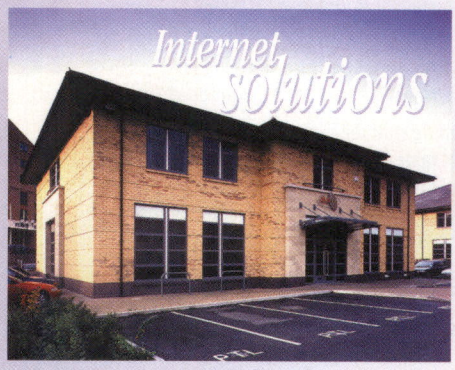

NetCOMPLETE offers true ISDN connectivity for the serious multiple power user who wishes PlusNet to configure their solution!

NetCOMPLETE is a 64K or 128K ISDN multi-user solution for the professional end-user who wishes to PlusNet to configure an Internet Solution. It allows your Company to access the Internet across it's LAN and via ISDN for an unlimited amount of users and includes multiple IP addresses and SMTP e-mail.

- A Free 30 Day Trial
- A UK domain name after the trial
- UK wide local call access via an 0845 number
- Multiple IP addresses
- SMTP e-mail
- Unlimited amounts of web space
- 24hr - 7 day a week Technical Support
- Full newsgroup access

FREE Optional Facilities

- CGI access to your Web Space
- SHELL access
- Mailing List Facility

Included with your NetCOMPLETE pack is the registration of a FREE .co.uk or ltd.uk domain name through our NetDOMAIN solution, taken after your free trial period of 30 days.

NetCOMPLETE 64 - equivalent to
£59.99 +VAT per month
minimum contract 2 years

NetCOMPLETE 128 - equivalent to
£99.99 +VAT per month
minimum contract 2 years

NetSTART is an entry level analogue or digital Internet solution.

Net-START is your basic business gateway to the Internet. Designed to allow access for a single PC, the account provides Fast reliable access to the very latest SUN Servers. This equipment is state-of-the art-gear, allowing modem connections at upto 56kbps and ISDN connections at upto 64K.

Connecting couldn't be simpler via an easy to use free CD or on the web at www.plus.net.uk.

- A Free 30 Day Trial
- A UK domain name after the trial
- UK wide local call access via an 0845 number
- Full support for x2 & K56Flex 56K modems
- Unlimited POP3 e-mail boxes & aliases
- Unlimited amounts of web space
- 0800 Technical Support 7am - 12pm everyday
- Full newsgroup access
- Dial up and ISDN access for the same price

FREE Optional Facilities

- CGI access to your Web Space
- SHELL access
- Mailing List Facility

Included with your NetSTART pack is the registration of a FREE .co.uk or ltd.uk domain name through our NetDOMAIN solution.

Taken after your free trial period of 30 days NetSTART is your entry level in harnessing the true power of the Internet.

NetSTART - equivalent to only
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minimum contract 2 years

NetSTART*plus* is our multi-user option

NetSTART*plus* - equivalent to only
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NetDIGITAL is your mind boggling 128K digital Internet solution for a single PC.

In contemplating ISDN access, we must first understand what ISDN is and how it can benefit you! ISDN is a phone line - with a difference - it's digital. If you think of a telephone line as a pipe that carries information from one point to another, ISDN is the mother of all pipes - it's a lot bigger and a lot cleaner. It is like replacing old one-inch lead water pipes with brand new three-inch stainless steel ones allowing faster transfer times and greater connectivity. Traditional telephone lines, analogue, and their modems must dedicate some capacity to error correction and retransmission. This overhead reduces the actual throughput as the pipe is not so clean. ISDN lines can dedicate all its capacity to data transmission.

- A Free 30 Day Trial
- A UK domain name after the trial
- UK wide local call access via an 0845 number
- Unlimited POP3 e-mail boxes & aliases
- Unlimited amounts of web space
- 0800 Technical Support 7am - 12pm everyday
- Full newsgroup access

FREE Optional Facilities

- CGI access to your Web Space
- SHELL access
- Mailing List Facility

Included with your NetDIGITAL pack is the registration of a FREE .co.uk or ltd.uk domain name through our NetDOMAIN solution.
Taken after your free trial period of 30 days NetDIGITAL is your 128K ISDN solution for putting a single PC on the net - quickly!

NetDIGITAL - equivalent to
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minimum contract 2 years

voted one of the Top 5 ISPs in the Country by internet magazine

NetGATEWAY offers a permanent solution for quality connectivity and no telecom bills - a leased line!

Any company wishing to connect their network to the Internet, ought to consider the benefits of having a dedicated and exclusive 'fast path' permanently connected with a leased line. Advantages are absolutely no phone costs or additional running costs outside of the setup and annual fees. Companies can maximise the unrestricted usage of the internet whilst making savings on their telecommunications costs. A leased line allows continuous TCP/IP traffic between the ourselves and your company which means quality performance is assured all the time. Your entire Local Area Network (LAN) is connected to the Internet via Routers, effectively making each PC part of the Internet. Since the connection is permanent, services such as news and mail are obtained directly from the high powered servers here at PlusNet. NetGATEWAY is our leased line solution, encompassing connectivity ranging from 64K through to 128K, 256K, 512K, 1Mb and an enormous 2Mb.

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E&OE

If you've come across any bizarre Web stories, email them to smiley@internet.emap.com. Any we use win a mystery prize

The News of the Strange

The dial-up dashboard

Disturbing news comes from a company called Visteon, a subsidiary of Ford. It's developing a computerised dashboard for the car of tomorrow, which lets the driver decide the layout. The location, size and colour of each dial are up to you. There's even talk of building Net access into the Visteon system, but Smiley thinks mobile phones are enough of a driving distraction already, let alone access to alt.binaries.pictures.erotica.

www.visteon.com

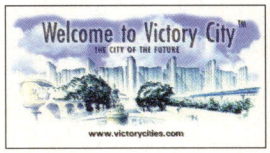
Living in Internet time

We often hear industry people talking about their business expanding in 'Internet time'. Well this bit of marketing speak looks like becoming a reality. Swatch has decided it's time for a new standard for timekeeping online. It wants to introduce Internet time to synchronise Net users in different time zones. The plan is to get rid of the current time system, based on the 60 seconds in a minute, 60 minutes in an hour principle that dates back to the Babylonian period. This would be replaced with a metric system. Each day would, Swatch claims, consist of 1000 beats, where a beat is equivalent to about 1.5 minutes. So hours and minutes are replaced by beats and a meridian curiously drawn through the Swatch HQ in Switzerland – we can't help thinking it's a bit cuckoo.

www.swatch.com

Victory City

A 75 year old millionaire in the US has unveiled plans to build the city of the future. The Victory City Web site includes a 30-page slideshow tour and a 20-page residents' guide. Orville Simpson (is this for real?) thinks the cities we live in are obsolete. He wants to create a higher standard of living in Victory Cities all over the world. Simpson reckons he needs $100 million to set up the Victory City Corporation to build his idea of utopia (which sounds like hell), so he's asking for investors on his Web site. Smiley Culture won't be contributing...



www.victorycities.com

The Smiley guide to Internet users

No 10. The Scotland Online User

Age: At least 12 years, like a good single malt whisky.

Appearance: The men have pot bellies tucked into skirts, resulting in an air (hopefully not too cold) of aggressive defensiveness, while their gorgeous red-haired lassies ooze with Celtic confidence.

Hangouts: Traditionalists favour the pub, chippy or football ground. Beware the new breed, who go for the wine bar, chippy or football ground.

Known associates: Jimmy, dogs on string, Mel Gibson, Billy Connolly and the cast of *Trainspotting*.

Likes: Drinking, dancing, football, doing Sean Connery impressions, and strange deep-fried food such as cream eggs, mars bars and cheese sandwiches.

Hates: The English and the second round of the World Cup.

In other words: Your typical English-hating, whisky-drinking, football-loving, bagpipe-toting, kilt-wearing Scot.

Philosophy: Scotland for the Scottish, Internet devolution and the .scot domain!

Latest fad: Web pages with tartan backgrounds and RealAudio bagpipe music. Guaranteed to keep the Sassenachs at bay.

Not to be confused with: UK Online users or Russ Abbott (the Celtic anti-Christ).

Most likely to say: "Are you looking at me, pal? D'ya wannae start something?"

Most unlikely to say: "See you Jimmy", "Actually I rather enjoyed my trip to London – the locals were so friendly!"

More from: www.sol.co.uk

Bookmarks of the rich and famous...

Net celebs open up their browsers and share their bookmarks with *Internet Magazine* readers. This month it's perhaps the world's best-known movie critic and larger than life personality...

Roger Ebert

He's one half of the infamous Siskel and Ebert partnership. The duo have hosted their own US high-rating movie review show for over 20 years. Roger Ebert, the bulky one rather than the bald one, is a Pulitzer Prize-winning film critic for the *Chicago Sun-Times*. He's written several books, including the annual bestseller *Roger Ebert's Video Companion* and the recent *Roger Ebert's Movie Yearbook 1999*. Like any critic, he's not short of opinions.

What do you like best about the Internet, Roger?
In the words of the *News of the World*, all human life is there.

And is there anything that really bugs you about it?
It needs to be a lot faster. I've got ISDN, and it's nowhere near fast enough. When the bandwidth problem is solved, the Web will really take off. Right now, it's at the same stage as phones were when they worked, but nobody had one.

So what are your favourite Web sites?

The Internet Movie Database

www.imdb.com

I use it daily in my work, and I like that it's built out of countless submissions from its users.

My Yahoo

http://my.yahoo.com

I have it customised up the proverbial wazoo! I have text headlines from graphic-intensive sites like E!, Wired News and the Independent. I can click on the stories without having to visit all the sites and sit through their downloads.

Slate and Salon

www.slate.com/www.salon.com

These are regular stops. I relate to them in the same way I relate to the *New Yorker*, *New Republic* and *Spectator* magazines.

Deja News

www.dejanews.com

An indirect way to find out about anything. What was the breed of the dog in *As Good As It Gets*? Search on the movie title AND dog and you go straight to the breeds newsgroup. This is invaluable for a journalist.

Paris Zoom

www.paris-anglo.com/zoom

A virtual tour of Paris, in 350,000 photographs. You can click to go down a street, turn around and look left or right. You can also get information on many of the shots. As the author of a book called *The Perfect London Walk*, I wish a similar project could be attempted in London.

Want to know more about Roger Ebert?

Check out his award-winning movie reviews for the *Chicago Sun-Times* at www.suntimes.com/ebert or email him at EBERT@compuserve.com.

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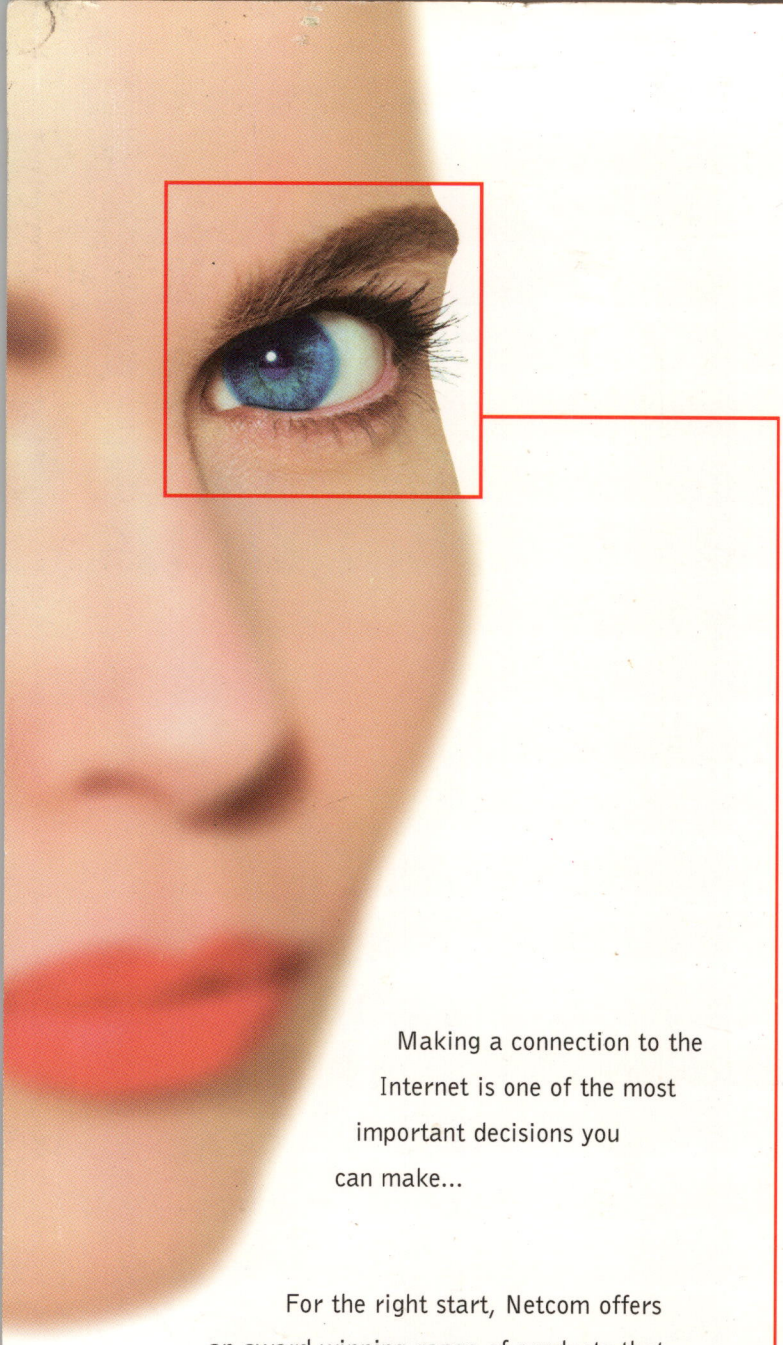

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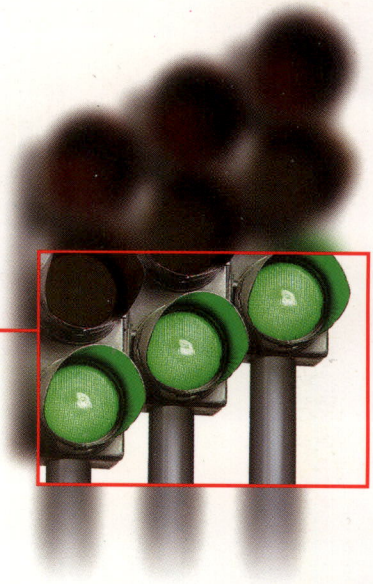

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